THE

AMERICAN

NAUTICAL ALMANAC

FOR THE YEAR

1911

FIRST EDITION

PUBLISHED BY AUTHORITY OF THE SECRETARY OF THE NAVY

WASHINGTON
BUREAU OF EQUIPMENT
1907

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PREFACE.

The American Nautical Almanac is designed specially for the use of navigators, and is adapted to the meridian of Greenwich. It contains the ephemerides of the Sun, Moon, and the planets Mercury, Venus, Mars, Jupiter, and Saturn; the geocentric angular distances of the center of the Moon from the center of the Sun, from certain fixed stars, and from the centers of the four most conspicuous planets; and the mean places of 150 fixed stars for the beginning of the year 1911. The elements and circumstances of the eclipses are also given, together with charts of the eclipses of the Sun.

The ephemerides of the Sun, Mercury, Venus, and Mars are derived from Professor NEWCOMB'S Tables, *Astronomical Papers of The American Ephemeris*, vol. 6.

The ephemerides of Jupiter and Saturn are derived from Dr. G. W. HILL'S Tables, *Astronomical Papers of The American Ephemeris*, vol. 7, parts 1 and 2.

The ephemeris of the Moon is derived from HANSEN'S *Tables de la Lune*, the mean longitude being corrected in accordance with Professor NEWCOMB'S *Researches on the Motion of the Moon.*

For a fuller statement of the data used in the construction of this volume reference should be made to *The American Ephemeris and Nautical Almanac* for the year 1911.

MILTON UPDEGRAFF,
Professor of Mathematics, U. S. Navy,
Director Nautical Almanac.

WASHINGTON, *December, 1907.*

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CHRONOLOGICAL ERAS AND CYCLES.

CHRONOLOGICAL ERAS.

THE YEAR 1911, WHICH COMPRISES THE LATTER PART OF THE 135TH AND THE BEGINNING OF THE 136TH YEAR OF THE INDEPENDENCE OF THE UNITED STATES OF AMERICA, CORRESPONDS TO—

The year 6624 of the Julian Period;

" 7419–7420 of the Byzantine era, the year 7420 commencing on September 1;

" 5671–5672 of the Jewish era, the year 5672 commencing on September 23, or, more exactly, at sunset on September 22;

" 2664 since the foundation of Rome, according to VARRO;

" 2658 since the beginning of the era of NABONASSAR, which has been assigned to Wednesday, the 26th of February of the 3967th year of the Julian Period; corresponding, in the notation of chronologists, to the 747th, and, in the notation of astronomers, to the 746th year before the birth of CHRIST;

" 2687 of the Olympiads, or the third year of the 672d Olympiad, commencing in July, 1911, if we fix the era of the Olympiads at 775½ years before CHRIST, or near the beginning of July of the year 3938 of the Julian Period;

" 2223 of the Grecian era, or the era of the SELEUCIDÆ, which began near the vernal equinox of the year, — 311 = B. C. 312, = 4402 of the Julian Period;

" 1627 of the era of DIOCLETIAN;

" 2571 of the Japanese era and to the 44th year of the period entitled "Meiji."

The year 1329 of the Mohammedan era, or the era of the Hegira, begins on the 2d day of January, 1911, and the year 1330 begins on the 22d day of December, 1911.

The first day of January of the year 1911 is the 2,419,038th day since the commencement of the Julian Period.

CHRONOLOGICAL CYCLES.

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SYMBOLS AND ABBREVIATIONS.

SIGNS OF THE PLANETS, ETC.

☉	The Sun.	♂	Mars.
☾	The Moon.	♃	Jupiter.
☿	Mercury.	♄	Saturn.
♀	Venus.	♅	Uranus.
⊕	The Earth.	♆	Neptune.

SIGNS OF THE ZODIAC.

Spring Signs.	1.	♈	Aries.	Autumn Signs.	7.	♎	Libra.
	2.	♉	Taurus.		8.	♏	Scorpius.
	3.	♊	Gemini.		9.	♐	Sagittarius.
Summer Signs.	4.	♋	Cancer.	Winter Signs.	10.	♑	Capricornus.
	5.	♌	Leo.		11.	♒	Aquarius.
	6.	♍	Virgo.		12.	♓	Pisces.

ASPECTS.

☌ Conjunction, or having the same Longitude or Right Ascension.
□ Quadrature, or differing ±90° in Longitude or Right Ascension.
☍ Opposition, or differing 180° in Longitude or Right Ascension.

ABBREVIATIONS.

☊	Ascending Node.	°	Degrees.
☋	Descending Node.	′	Minutes of Arc.
N.	North.	″	Seconds of Arc.
S.	South.	h	Hours.
E.	East.	m	Minutes of Time.
W.	West.	s	Seconds of Time.

ASTRONOMICAL EPHEMERIS

FOR THE

MERIDIAN OF GREENWICH.

AT GREENWICH APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Semi-diameter.	Sidereal Time of Semi-diameter Passing Meridian.	Equation of Time, to be Added to Apparent Time.	Diff. for 1 Hour.
		h m s	s	° ′ ″	″	′ ″	s	m s	s
SUN.	1	18 43 24.51	+ 11.056	S. 23 4 38.9	+ 11.46	16 17.82	71.07	3 19.41	1.196
Mon.	2	18 47 49.70	11.043	22 59 49.9	12.62	16 17.82	71.03	3 47.97	1.183
Tues.	3	18 52 14.56	11.028	22 54 33.4	13.77	16 17.82	70.99	4 16.19	1.168
Wed.	4	18 56 39.04	+ 11.012	22 48 49.5	+ 14.90	16 17.82	70.94	4 44.04	1.152
Thur.	5	19 1 3.11	10.994	22 42 38.4	16.03	16 17.82	70.88	5 11.48	1.134
Frid.	6	19 5 26.75	10.975	22 36 0.3	17.15	16 17.81	70.82	5 38.48	1.115
Sat.	7	19 9 49.92	+ 10.955	22 28 55.3	+ 18.26	16 17.80	70.76	6 5.02	1.096
SUN.	8	19 14 12.60	10.934	22 21 23.7	19.37	16 17.78	70.70	6 31.07	1.075
Mon.	9	19 18 34.76	10.912	22 13 25.7	20.47	16 17.75	70.63	6 56.60	1.053
Tues.	10	19 22 56.36	+ 10.888	22 5 1.6	+ 21.55	16 17.72	70.56	7 21.57	1.029
Wed.	11	19 27 17.38	10.863	21 56 11.6	22.62	16 17.68	70.48	7 45.97	1.004
Thur.	12	19 31 37.81	10.838	21 46 56.0	23.68	16 17.64	70.40	8 9.77	0.979
Frid.	13	19 35 57.62	+ 10.812	21 37 15.2	+ 24.72	16 17.60	70.32	8 32.96	0.953
Sat.	14	19 40 16.80	10.786	21 27 9.3	25.76	16 17.55	70.23	8 55.52	0.927
SUN.	15	19 44 35.34	10.759	21 16 38.6	26.79	16 17.49	70.14	9 17.45	0.900
Mon.	16	19 48 53.22	+ 10.731	21 5 43.5	+ 27.81	16 17.42	70.05	9 38.72	0.872
Tues.	17	19 53 10.43	10.703	20 54 24.2	28.81	16 17.35	69.96	9 59.31	0.844
Wed.	18	19 57 26.96	10.674	20 42 40.9	29.80	16 17.27	69.86	10 19.22	0.815
Thur.	19	20 1 42.79	+ 10.645	20 30 34.0	+ 30.77	16 17.18	69.76	10 38.44	0.786
Frid.	20	20 5 57.90	10.615	20 18 3.9	31.73	16 17.08	69.66	10 56.94	0.756
Sat.	21	20 10 12.28	10.584	20 5 10.9	32.68	16 16.98	69.56	11 14.72	0.726
SUN.	22	20 14 25.93	+ 10.553	19 51 55.3	+ 33.62	16 16.88	69.45	11 31.76	0.695
Mon.	23	20 18 38.83	10.522	19 38 17.4	34.54	16 16.78	69.34	11 48.06	0.664
Tues.	24	20 22 50.97	10.490	19 24 17.7	35.44	16 16.68	69.23	12 3.60	0.632
Wed.	25	20 27 2.34	+ 10.457	19 9 56.4	+ 36.33	16 16.57	69.12	12 18.37	0.599
Thur.	26	20 31 12.92	10.424	18 55 14.0	37.20	16 16.45	69.01	12 32.36	0.566
Frid.	27	20 35 22.71	10.391	18 40 10.8	38.06	16 16.32	68.90	12 45.55	0.533
Sat.	28	20 39 31.70	+ 10.358	18 24 47.1	+ 38.90	16 16.18	68.79	12 57.95	0.500
SUN.	29	20 43 39.88	10.324	18 9 3.4	39.73	16 16.05	68.67	13 9.55	0.466
Mon.	30	20 47 47.24	10.290	17 53 0.2	40.54	16 15.92	68.56	13 20.33	0.432
Tues.	31	20 51 53.78	10.256	17 36 37.8	41.33	16 15.80	68.45	13 30.29	0.398
Wed.	32	20 55 59.50	+ 10.221	S. 17 19 56.6	+ 42.10	16 15.67	68.33	13 39.42	0.363

NOTE.—The mean time of semidiameter passing the meridian may be found by subtracting 0.19 from the sidereal time.
The sign + prefixed to the hourly change of declination indicates that south declinations are decreasing.

AT GREENWICH MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Equation of Time, to be Subtracted from Mean Time.	Diff. for 1 Hour.	Sidereal Time, or Right Ascension of Mean Sun.
		h m s	s	° ′ ″	″	m s	s	h m s
SUN.	1	18 43 23.90	+ 11.052	S. 23 4 39.5	+ 11.46	3 19.35	− 1.196	18 40 4.55
Mon.	2	18 47 49.00	11.039	22 59 50.7	12.61	3 47.89	1.183	18 44 1.11
Tues.	3	18 52 13.77	11.024	22 54 34.4	13.75	4 16.10	1.168	18 47 57.67
Wed.	4	18 56 38.17	+ 11.008	22 48 50.7	+ 14.89	4 43.94	− 1.152	18 51 54.22
Thur.	5	19 1 2.16	10.991	22 42 39.8	16.02	5 11.38	1.134	18 55 50.78
Frid.	6	19 5 25.72	10.972	22 36 1.9	17.14	5 38.38	1.115	18 59 47.34
Sat.	7	19 9 48.81	+ 10.952	22 28 57.2	+ 18.25	6 4.91	− 1.096	19 3 43.90
SUN.	8	19 14 11.41	10.931	22 21 25.8	19.36	6 30.95	1.075	19 7 40.46
Mon.	9	19 18 33.49	10.909	22 13 28.1	20.45	6 56.48	1.053	19 11 37.02
Tues.	10	19 22 55.02	+ 10.885	22 5 4.2	+ 21.53	7 21.45	− 1.029	19 15 33.58
Wed.	11	19 27 15.97	10.861	21 56 14.5	22.60	7 45.84	1.004	19 19 30.14
Thur.	12	19 31 36.33	10.836	21 46 59.2	23.66	8 9.64	0.979	19 23 26.69
Frid.	13	19 35 56.08	+ 10.810	21 37 18.7	+ 24.71	8 32.83	− 0.953	19 27 23.25
Sat.	14	19 40 15.20	10.784	21 27 13.1	25.75	8 55.39	0.927	19 31 19.81
SUN.	15	19 44 33.68	10.757	21 16 42.8	26.78	9 17.31	0.900	19 35 16.37
Mon.	16	19 48 51.50	+ 10.729	21 5 48.0	+ 27.79	9 38.58	− 0.872	19 39 12.92
Tues.	17	19 53 8.66	10.701	20 54 28.9	28.79	9 59.18	0.844	19 43 9.48
Wed.	18	19 57 25.13	10.672	20 42 46.0	29.78	10 19.09	0.815	19 47 6.04
Thur.	19	20 1 40.90	+ 10.642	20 30 39.5	+ 30.76	10 38.31	− 0.786	19 51 2.60
Frid.	20	20 5 55.96	10.612	20 18 9.7	31.72	10 56.81	0.756	19 54 59.16
Sat.	21	20 10 10.30	10.582	20 5 17.0	32.67	11 14.59	0.726	19 58 55.72
SUN.	22	20 14 23.90	+ 10.551	19 52 1.8	+ 33.60	11 31.63	− 0.695	20 2 52.27
Mon.	23	20 18 36.76	10.520	19 38 24.2	34.52	11 47.93	0.664	20 6 48.83
Tues.	24	20 22 48.86	10.488	19 24 24.8	35.43	12 3.48	0.632	20 10 45.39
Wed.	25	20 27 0.19	+ 10.456	19 10 3.8	+ 36.32	12 18.25	− 0.599	20 14 41.94
Thur.	26	20 31 10.74	10.423	18 55 21.7	37.19	12 32.24	0.566	20 18 38.50
Frid.	27	20 35 20.50	10.390	18 40 18.8	38.05	12 45.44	0.533	20 22 35.06
Sat.	28	20 39 29.46	+ 10.357	18 24 55.5	+ 38.89	12 57.84	− 0.500	20 26 31.62
SUN.	29	20 43 37.61	10.323	18 9 12.2	39.71	13 9.44	0.466	20 30 28.17
Mon.	30	20 47 44.95	10.289	17 53 9.2	40.52	13 20.23	0.432	20 34 24.73
Tues.	31	20 51 51.48	10.255	17 36 47.1	41.31	13 30.20	0.398	20 38 21.28
Wed.	32	20 55 57.18	+ 10.220	S. 17 20 6.2	+ 42.09	13 39.34	− 0.363	20 42 17.84

NOTE.—The semidiameter for mean noon may be assumed the same as that for apparent noon.
The sign + prefixed to the hourly change of declination indicates that south declinations are decreasing.

Diff. for 1 Hour, + 9ˢ.8565. (Table III.)

AT GREENWICH MEAN NOON.

Day of the Month.	Day of the Year.	THE SUN'S TRUE LONGITUDE. λ	λ′	Diff. for 1 Hour.	LATITUDE.	Logarithm of the Radius Vector of the Earth.	Diff. for 1 Hour.	Mean Time of Sidereal Noon.
		° ′ ″	′ ″	″	″			h m s
1	1	279 58 40.2	58 52.0	152.95	− 0.56	9.992 6908	− 1.5	5 19 3.04
2	2	280 59 51.0	60 2.6	152.95	0.61	9.992 6880	0.8	5 15 7.13
3	3	282 1 1.8	1 13.2	152.94	0.62	9.992 6869	− 0.1	5 11 11.21
4	4	283 2 12.4	2 23.6	152.93	− 0.62	9.992 6876	+ 0.7	5 7 15.30
5	5	284 3 22.7	3 33.7	152.92	0.58	9.992 6901	1.5	5 3 19.39
6	6	285 4 32.6	4 43.5	152.91	0.53	9.992 6945	2.3	4 59 23.48
7	7	286 5 42.2	5 52.9	152.89	− 0.43	9.992 7009	+ 3.1	4 55 27.57
8	8	287 6 51.3	7 1.8	152.87	0.31	9.992 7095	4.0	4 51 31.65
9	9	288 7 59.9	8 10.2	152.85	0.20	9.992 7203	5.0	4 47 35.74
10	10	289 9 7.9	9 18.0	152.82	− 0.07	9.992 7336	+ 6.1	4 43 39.82
11	11	290 10 15.3	10 25.2	152.80	+ 0.07	9.992 7495	7.2	4 39 43.91
12	12	291 11 22.1	11 31.9	152.77	0.19	9.992 7680	8.3	4 35 48.00
13	13	292 12 28.4	12 38.0	152.75	+ 0.30	9.992 7893	+ 9.5	4 31 52.09
14	14	293 13 34.2	13 43.6	152.73	0.37	9.992 8135	10.7	4 27 56.18
15	15	294 14 39.5	14 48.8	152.71	0.41	9.992 8406	11.9	4 24 0.26
16	16	295 15 44.4	15 53.5	152.70	+ 0.43	9.992 8705	+ 13.1	4 20 4.36
17	17	296 16 48.9	16 57.8	152.68	0.42	9.992 9032	14.2	4 16 8.44
18	18	297 17 53.0	18 1.7	152.66	0.38	9.992 9387	15.3	4 12 12.53
19	19	298 18 56.7	19 5.2	152.65	+ 0.31	9.992 9767	+ 16.4	4 8 16.62
20	20	299 20 0.0	20 8.4	152.63	0.22	9.993 0172	17.4	4 4 20.70
21	21	300 21 3.0	21 11.2	152.61	+ 0.10	9.993 0600	18.3	4 0 24.79
22	22	301 22 5.6	22 13.6	152.60	− 0.01	9.993 1050	+ 19.2	3 56 28.88
23	23	302 23 7.7	23 15.5	152.58	0.13	9.993 1521	20.0	3 52 32.97
24	24	303 24 9.2	24 16.9	152.55	0.25	9.993 2012	20.8	3 48 37.06
25	25	304 25 10.2	25 17.7	152.53	− 0.38	9.993 2521	+ 21.6	3 44 41.15
26	26	305 26 10.6	26 17.9	152.50	0.48	9.993 3048	22.3	3 40 45.24
27	27	306 27 10.3	27 17.4	152.47	0.57	9.993 3591	23.0	3 36 49.32
28	28	307 28 9.2	28 16.2	152.44	− 0.65	9.993 4150	+ 23.6	3 32 53.41
29	29	308 29 7.3	29 14.2	152.40	0.69	9.993 4724	24.2	3 28 57.50
30	30	309 30 4.5	30 11.2	152.36	0.72	9.993 5312	24.8	3 25 1.59
31	31	310 31 0.7	31 7.2	152.32	0.71	9.993 5914	25.4	3 21 5.68
32	32	311 31 55.7	32 2.1	152.27	− 0.68	9.993 6530	+ 25.9	3 17 9.77

NOTE.—The longitudes in the column λ are referred to the true equinox of their own date, while those in the column λ′ are referred to the mean equinox of the beginning of the Besselian fictitious year.

Diff. for 1 Hour, − 9ˢ.8296. (Table II.)

GREENWICH MEAN TIME.

THE MOON'S

Day of the Month.	SEMIDIAMETER. Noon.	SEMIDIAMETER. Midnight.	HORIZONTAL PARALLAX. Noon.	Diff. for 1 Hour.	HORIZONTAL PARALLAX. Midnight.	Diff. for 1 Hour.	UPPER TRANSIT. Meridian of Greenwich.	Diff. for 1 Hour.	AGE. Noon.
	′ ″	′ ″	′ ″	″	′ ″	″	h m	m	d
1	14 59.7	15 2.8	54 55.9	+ 0.92	55 7.3	+ 0.98	0 47.3	2.18	0.8
2	15 6.1	15 9.6	55 19.5	1.05	55 32.4	1.11	1 39.3	2.13	1.8
3	15 13.3	15 17.2	55 46.0	1.17	56 0.4	1.23	2 29.6	2.05	2.8
4	15 21.3	15 25.6	56 15.5	+ 1.29	56 31.3	+ 1.35	3 17.9	1.98	3.8
5	15 30.2	15 34.9	56 47.9	1.41	57 5.3	1.47	4 4.5	1.91	4.8
6	15 39.8	15 44.9	57 23.3	1.52	57 41.9	1.57	4 50.0	1.89	5.8
7	15 50.1	15 55.3	58 0.9	+ 1.60	58 20.2	+ 1.61	5 35.5	1.91	6.8
8	16 0.6	16 5.8	58 39.6	1.60	58 58.7	1.57	6 22.4	2.00	7.8
9	16 10.8	16 15.6	59 17.2	1.50	59 34.7	1.40	7 12.1	2.15	8.8
10	16 20.0	16 23.8	59 50.8	+ 1.26	60 4.9	+ 1.07	8 5.9	2.33	9.8
11	16 27.0	16 29.4	60 16.6	0.85	60 25.4	+ 0.60	9 4.5	2.54	10.8
12	16 30.9	16 31.5	60 30.9	+ 0.31	60 32.9	0.00	10 7.5	2.69	11.8
13	16 31.0	16 29.4	60 31.0	− 0.32	60 25.2	− 0.65	11 12.9	2.72	12.8
14	16 26.7	16 23.1	60 15.5	0.97	60 2.0	1.27	12 17.3	2.60	13.8
15	16 18.5	16 13.1	59 45.1	1.53	59 25.3	1.76	13 17.9	2.42	14.8
16	16 7.0	16 0.3	59 2.9	− 1.95	58 38.5	− 2.08	14 13.2	2.19	15.8
17	15 53.3	15 46.1	58 12.9	2.17	57 46.5	2.20	15 3.3	1.99	16.8
18	15 38.9	15 31.8	57 20.0	2.19	56 53.9	2.14	15 49.2	1.84	17.8
19	15 24.9	15 18.4	56 28.6	− 2.05	56 4.7	− 1.92	16 32.3	1.76	18.8
20	15 12.3	15 6.8	55 42.5	1.77	55 22.2	1.60	17 13.9	1.71	19.8
21	15 1.9	14 57.6	55 4.2	1.41	54 48.6	1.20	17 55.1	1.73	20.8
22	14 54.1	14 51.2	54 35.5	− 0.99	54 24.9	− 0.77	18 37.2	1.79	21.8
23	14 49.0	14 47.6	54 17.0	0.55	54 11.7	− 0.34	19 21.0	1.87	22.8
24	14 46.8	14 46.7	54 8.9	− 0.13	54 8.6	+ 0.07	20 7.3	1.98	23.8
25	14 47.3	14 48.4	54 10.6	+ 0.25	54 14.7	+ 0.43	20 56.2	2.09	24.8
26	14 50.1	14 52.3	54 20.9	0.59	54 28.9	0.74	21 47.4	2.17	25.8
27	14 54.9	14 57.9	54 38.6	0.87	54 49.7	0.98	22 40.1	2.20	26.8
28	15 1.3	15 4.9	55 2.0	+ 1.07	55 15.3	+ 1.14	23 32.8	2.16	27.8
29	15 8.7	15 12.7	55 29.3	1.19	55 43.8	1.23	δ	. .	28.8
30	15 16.8	15 20.9	55 58.7	1.25	56 13.7	1.25	0 24.5	2.12	0.1
31	15 25.0	15 29.0	56 28.8	1.25	56 43.7	1.23	1 14.3	2.03	1.1
32	15 33.0	15 36.9	56 58.3	+ 1.21	57 12.7	+ 1.18	2 2.1	1.96	2.1

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 1.			
	h m s	s	° ′ ″	″
0	19 25 44.24	2.2736	S. 26 30 23.9	3.170
1	19 28 0.63	2.2727	26 27 9.6	3.308
2	19 30 16.96	2.2717	26 23 47.0	3.445
3	19 32 33.23	2.2706	26 20 16.2	3.581
4	19 34 49.43	2.2693	26 16 37.3	3.717
5	19 37 5.55	2.2681	26 12 50.2	3.853
6	19 39 21.60	2.2668	26 8 54.9	3.989
7	19 41 37.56	2.2653	26 4 51.5	4.125
8	19 43 53.44	2.2639	26 0 39.9	4.260
9	19 46 9.23	2.2623	25 56 20.3	4.394
10	19 48 24.92	2.2607	25 51 52.6	4.528
11	19 50 40.51	2.2590	25 47 16.9	4.663
12	19 52 56.00	2.2573	25 42 33.1	4.797
13	19 55 11.38	2.2554	25 37 41.3	4.929
14	19 57 26.65	2.2536	25 32 41.6	5.062
15	19 59 41.81	2.2516	25 27 33.9	5.194
16	20 1 56.84	2.2495	25 22 18.3	5.326
17	20 4 11.75	2.2474	25 16 54.8	5.458
18	20 6 26.53	2.2453	25 11 23.4	5.588
19	20 8 41.18	2.2431	25 5 44.2	5.718
20	20 10 55.70	2.2408	24 59 57.2	5.848
21	20 13 10.08	2.2385	24 54 2.4	5.978
22	20 15 24.32	2.2361	24 47 59.9	6.106
23	20 17 38.41	2.2336	S. 24 41 49.7	6.234
	MONDAY 2.			
0	20 19 52.35	2.2311	S. 24 35 31.8	6.362
1	20 22 6.14	2.2286	24 29 6.3	6.488
2	20 24 19.78	2.2260	24 22 33.2	6.615
3	20 26 33.26	2.2233	24 15 52.5	6.741
4	20 28 46.58	2.2207	24 9 4.3	6.866
5	20 30 59.74	2.2180	24 2 8.6	6.991
6	20 33 12.74	2.2153	23 55 5.4	7.115
7	20 35 25.57	2.2124	23 47 54.8	7.238
8	20 37 38.23	2.2096	23 40 36.9	7.359
9	20 39 50.72	2.2067	23 33 11.7	7.482
10	20 42 3.03	2.2038	23 25 39.1	7.603
11	20 44 15.17	2.2008	23 17 59.3	7.723
12	20 46 27.13	2.1978	23 10 12.3	7.843
13	20 48 38.91	2.1948	23 2 18.1	7.963
14	20 50 50.51	2.1918	22 54 16.8	8.080
15	20 53 1.92	2.1887	22 46 8.5	8.198
16	20 55 13.15	2.1856	22 37 53.1	8.315
17	20 57 24.19	2.1825	22 29 30.7	8.431
18	20 59 35.05	2.1794	22 21 1.4	8.546
19	21 1 45.72	2.1763	22 12 25.2	8.660
20	21 3 56.20	2.1731	22 3 42.2	8.774
21	21 6 6.49	2.1699	21 54 52.3	8.887
22	21 8 16.59	2.1667	21 45 55.7	8.999
23	21 10 26.49	2.1634	21 36 52.4	9.110
24	21 12 36.20	2.1603	S. 21 27 42.5	9.220

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 3.			
	h m s	s	° ′ ″	″
0	21 12 36.20	2.1603	S. 21 27 42.5	9.220
1	21 14 45.72	2.1570	21 18 26.0	9.330
2	21 16 55.04	2.1538	21 9 2.9	9.439
3	21 19 4.17	2.1505	20 59 33.3	9.548
4	21 21 13.10	2.1472	20 49 57.2	9.654
5	21 23 21.83	2.1439	20 40 14.8	9.760
6	21 25 30.37	2.1408	20 30 26.0	9.866
7	21 27 38.72	2.1375	20 20 30.9	9.970
8	21 29 46.87	2.1343	20 10 29.6	10.073
9	21 31 54.83	2.1311	20 0 22.1	10.177
10	21 34 2.60	2.1278	19 50 8.4	10.279
11	21 36 10.17	2.1246	19 39 48.6	10.380
12	21 38 17.55	2.1213	19 29 22.8	10.480
13	21 40 24.73	2.1181	19 18 51.0	10.579
14	21 42 31.72	2.1149	19 8 13.3	10.678
15	21 44 38.52	2.1118	18 57 29.7	10.775
16	21 46 45.13	2.1086	18 46 40.3	10.871
17	21 48 51.55	2.1054	18 35 45.2	10.967
18	21 50 57.78	2.1023	18 24 44.3	11.062
19	21 53 3.82	2.0992	18 13 37.8	11.155
20	21 55 9.68	2.0961	18 2 25.7	11.248
21	21 57 15.35	2.0930	17 51 8.0	11.341
22	21 59 20.84	2.0900	17 39 44.8	11.432
23	22 1 26.15	2.0870	S. 17 28 16.2	11.522
	WEDNESDAY 4.			
0	22 3 31.28	2.0840	S. 17 16 42.2	11.611
1	22 5 36.23	2.0810	17 5 2.9	11.699
2	22 7 41.00	2.0781	16 53 18.3	11.787
3	22 9 45.60	2.0753	16 41 28.5	11.873
4	22 11 50.03	2.0723	16 29 33.5	11.959
5	22 13 54.28	2.0694	16 17 33.4	12.043
6	22 15 58.36	2.0667	16 5 28.3	12.127
7	22 18 2.28	2.0640	15 53 18.2	12.209
8	22 20 6.04	2.0613	15 41 3.2	12.291
9	22 22 9.63	2.0585	15 28 43.3	12.372
10	22 24 13.06	2.0559	15 16 18.6	12.452
11	22 26 16.34	2.0533	15 3 49.1	12.531
12	22 28 19.46	2.0508	14 51 14.9	12.608
13	22 30 22.43	2.0483	14 38 36.1	12.685
14	22 32 25.25	2.0458	14 25 52.7	12.762
15	22 34 27.92	2.0433	14 13 4.7	12.837
16	22 36 30.45	2.0410	14 0 12.3	12.911
17	22 38 32.84	2.0387	13 47 15.4	12.984
18	22 40 35.09	2.0364	13 34 14.2	13.056
19	22 42 37.21	2.0342	13 21 8.7	13.127
20	22 44 39.19	2.0319	13 7 59.0	13.197
21	22 46 41.04	2.0298	12 54 45.1	13.267
22	22 48 42.77	2.0278	12 41 27.0	13.335
23	22 50 44.38	2.0258	12 28 4.9	13.402
24	22 52 45.86	2.0238	S. 12 14 38.8	13.468

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
THURSDAY 5.	h m s	s	° ′ ″	″
0	22 52 45.86	2.0238	S. 12 14 38.8	13.468
1	22 54 47.23	2.0219	12 1 8.7	13.534
2	22 56 48.49	2.0201	11 47 34.7	13.598
3	22 58 49.64	2.0183	11 33 56.9	13.662
4	23 0 50.69	2.0166	11 20 15.3	13.724
5	23 2 51.63	2.0149	11 6 30.0	13.786
6	23 4 52.48	2.0133	10 52 41.0	13.847
7	23 6 53.23	2.0118	10 38 48.4	13.906
8	23 8 53.89	2.0103	10 24 52.3	13.964
9	23 10 54.46	2.0088	10 10 52.7	14.022
10	23 12 54.95	2.0075	9 56 49.7	14.078
11	23 14 55.36	2.0063	9 42 43.3	14.134
12	23 16 55.70	2.0051	9 28 33.6	14.188
13	23 18 55.97	2.0039	9 14 20.7	14.242
14	23 20 56.17	2.0028	9 0 4.6	14.295
15	23 22 56.30	2.0018	8 45 45.3	14.347
16	23 24 56.38	2.0008	8 31 23.0	14.397
17	23 26 56.40	1.9999	8 16 57.7	14.447
18	23 28 56.37	1.9992	8 2 29.4	14.496
19	23 30 56.30	1.9984	7 47 58.2	14.543
20	23 32 56.18	1.9978	7 33 24.2	14.589
21	23 34 56.03	1.9973	7 18 47.5	14.635
22	23 36 55.85	1.9967	7 4 8.0	14.680
23	23 38 55.63	1.9962	S. 6 49 25.9	14.723
FRIDAY 6.				
0	23 40 55.39	1.9958	S. 6 34 41.2	14.766
1	23 42 55.13	1.9956	6 19 54.0	14.807
2	23 44 54.86	1.9953	6 5 4.4	14.848
3	23 46 54.57	1.9952	5 50 12.3	14.888
4	23 48 54.28	1.9952	5 35 17.9	14.926
5	23 50 53.99	1.9952	5 20 21.2	14.963
6	23 52 53.70	1.9953	5 5 22.3	14.999
7	23 54 53.42	1.9954	4 50 21.3	15.034
8	23 56 53.15	1.9957	4 35 18.2	15.069
9	23 58 52.90	1.9960	4 20 13.0	15.102
10	0 0 52.67	1.9964	4 5 5.9	15.134
11	0 2 52.47	1.9969	3 49 56.9	15.166
12	0 4 52.30	1.9975	3 34 46.0	15.196
13	0 6 52.17	1.9982	3 19 33.4	15.224
14	0 8 52.08	1.9988	3 4 19.1	15.252
15	0 10 52.03	1.9997	2 49 3.1	15.279
16	0 12 52.04	2.0006	2 33 45.6	15.305
17	0 14 52.10	2.0016	2 18 26.5	15.330
18	0 16 52.23	2.0027	2 3 6.0	15.353
19	0 18 52.42	2.0038	1 47 44.1	15.376
20	0 20 52.69	2.0051	1 32 20.9	15.397
21	0 22 53.03	2.0064	1 16 56.5	15.417
22	0 24 53.46	2.0078	1 1 30.9	15.436
23	0 26 53.97	2.0093	0 46 4.2	15.454
24	0 28 54.58	2.0109	S. 0 30 36.4	15.471

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
SATURDAY 7.	h m s	s	° ′ ″	″
0	0 28 54.58	2.0109	S. 0 30 36.4	15.471
1	0 30 55.28	2.0126	S. 0 15 7.7	15.487
2	0 32 56.09	2.0144	N. 0 0 22.0	15.502
3	0 34 57.01	2.0163	0 15 52.5	15.514
4	0 36 58.04	2.0182	0 31 23.7	15.527
5	0 38 59.19	2.0202	0 46 55.7	15.538
6	0 41 0.46	2.0223	1 2 28.3	15.548
7	0 43 1.86	2.0245	1 18 1.4	15.556
8	0 45 3.40	2.0268	1 33 35.0	15.563
9	0 47 5.08	2.0292	1 49 9.0	15.570
10	0 49 6.90	2.0316	2 4 43.4	15.576
11	0 51 8.87	2.0342	2 20 18.1	15.579
12	0 53 11.00	2.0368	2 35 52.9	15.581
13	0 55 13.29	2.0396	2 51 27.8	15.583
14	0 57 15.75	2.0425	3 7 2.8	15.583
15	0 59 18.39	2.0454	3 22 37.7	15.582
16	1 1 21.20	2.0483	3 38 12.6	15.579
17	1 3 24.19	2.0514	3 53 47.2	15.575
18	1 5 27.37	2.0548	4 9 21.6	15.571
19	1 7 30.76	2.0581	4 24 55.7	15.564
20	1 9 34.34	2.0613	4 40 29.3	15.556
21	1 11 38.12	2.0648	4 56 2.4	15.547
22	1 13 42.12	2.0684	5 11 34.9	15.537
23	1 15 46.33	2.0721	N. 5 27 6.8	15.526
SUNDAY 8.				
0	1 17 50.77	2.0758	N. 5 42 38.0	15.513
1	1 19 55.43	2.0796	5 58 8.3	15.498
2	1 22 0.32	2.0835	6 13 37.7	15.483
3	1 24 5.45	2.0876	6 29 6.2	15.465
4	1 26 10.83	2.0918	6 44 33.6	15.447
5	1 28 16.46	2.0959	6 59 59.8	15.427
6	1 30 22.34	2.1002	7 15 24.8	15.406
7	1 32 28.48	2.1045	7 30 48.5	15.383
8	1 34 34.88	2.1090	7 46 10.8	15.358
9	1 36 41.56	2.1136	8 1 31.5	15.333
10	1 38 48.51	2.1182	8 16 50.7	15.306
11	1 40 55.74	2.1229	8 32 8.2	15.278
12	1 43 3.26	2.1278	8 47 24.0	15.248
13	1 45 11.07	2.1327	9 2 37.9	15.216
14	1 47 19.18	2.1377	9 17 49.9	15.183
15	1 49 27.59	2.1428	9 32 59.8	15.148
16	1 51 36.31	2.1479	9 48 7.6	15.112
17	1 53 45.34	2.1532	10 3 13.2	15.074
18	1 55 54.69	2.1586	10 18 16.5	15.034
19	1 58 4.37	2.1640	10 33 17.4	14.993
20	2 0 14.37	2.1694	10 48 15.7	14.951
21	2 2 24.70	2.1750	11 3 11.4	14.907
22	2 4 35.37	2.1808	11 18 4.5	14.861
23	2 6 46.39	2.1865	11 32 54.7	14.813
24	2 8 57.75	2.1923	N. 11 47 42.1	14.765

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 9.			
	h m s	s	° ′ ″	″
0	2 8 57.75	2.1923	N.11 47 42.1	14.765
1	2 11 9.47	2.1983	12 2 26.5	14.713
2	2 13 21.54	2.2043	12 17 7.7	14.661
3	2 15 33.98	2.2103	12 31 45.8	14.608
4	2 17 46.78	2.2165	12 46 20.6	14.551
5	2 19 59.96	2.2228	13 0 52.0	14.493
6	2 22 13.51	2.2290	13 15 19.8	14.434
7	2 24 27.44	2.2354	13 29 44.0	14.373
8	2 26 41.76	2.2419	13 44 4.5	14.310
9	2 28 56.47	2.2485	13 58 21.2	14.246
10	2 31 11.58	2.2551	14 12 34.0	14.179
11	2 33 27.08	2.2617	14 26 42.7	14.111
12	2 35 42.98	2.2684	14 40 47.3	14.041
13	2 37 59.29	2.2753	14 54 47.6	13.969
14	2 40 16.01	2.2821	15 8 43.6	13.896
15	2 42 33.14	2.2890	15 22 35.1	13.820
16	2 44 50.69	2.2960	15 36 22.0	13.743
17	2 47 8.66	2.3031	15 50 4.2	13.663
18	2 49 27.06	2.3102	16 3 41.6	13.582
19	2 51 45.88	2.3173	16 17 14.1	13.499
20	2 54 5.13	2.3245	16 30 41.5	13.414
21	2 56 24.82	2.3318	16 44 3.8	13.328
22	2 58 44.94	2.3390	16 57 20.8	13.239
23	3 1 5.50	2.3464	N.17 10 32.5	13.148
	TUESDAY 10.			
0	3 3 26.51	2.3538	N.17 23 38.6	13.055
1	3 5 47.96	2.3613	17 36 39.1	12.961
2	3 8 9.86	2.3688	17 49 33.9	12.865
3	3 10 32.21	2.3763	18 2 22.9	12.767
4	3 12 55.01	2.3838	18 15 5.9	12.666
5	3 15 18.26	2.3913	18 27 42.8	12.563
6	3 17 41.97	2.3990	18 40 13.5	12.458
7	3 20 6.14	2.4066	18 52 37.8	12.352
8	3 22 30.76	2.4142	19 4 55.7	12.243
9	3 24 55.84	2.4219	19 17 7.0	12.133
10	3 27 21.39	2.4297	19 29 11.7	12.021
11	3 29 47.40	2.4373	19 41 9.5	11.906
12	3 32 13.87	2.4450	19 53 0.4	11.790
13	3 34 40.80	2.4528	20 4 44.3	11.672
14	3 37 8.20	2.4605	20 16 21.0	11.551
15	3 39 36.06	2.4682	20 27 50.4	11.428
16	3 42 4.38	2.4759	20 39 12.4	11.304
17	3 44 33.17	2.4837	20 50 26.9	11.178
18	3 47 2.42	2.4913	21 1 33.7	11.049
19	3 49 32.13	2.4990	21 12 32.8	10.919
20	3 52 2.30	2.5067	21 23 24.0	10.786
21	3 54 32.93	2.5143	21 34 7.1	10.651
22	3 57 4.02	2.5219	21 44 42.1	10.515
23	3 59 35.56	2.5295	21 55 8.9	10.377
24	4 2 7.56	2.5371	N.22 5 27.3	10.236

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 11.			
	h m s	s	° ′ ″	″
0	4 2 7.56	2.5371	N.22 5 27.3	10.236
1	4 4 40.01	2.5446	22 15 37.2	10.093
2	4 7 12.91	2.5521	22 25 38.5	9.949
3	4 9 46.26	2.5595	22 35 31.1	9.803
4	4 12 20.05	2.5669	22 45 14.9	9.655
5	4 14 54.29	2.5743	22 54 49.7	9.504
6	4 17 28.96	2.5815	23 4 15.4	9.352
7	4 20 4.07	2.5887	23 13 31.9	9.198
8	4 22 39.61	2.5958	23 22 39.2	9.043
9	4 25 15.57	2.6028	23 31 37.1	8.885
10	4 27 51.95	2.6098	23 40 25.4	8.725
11	4 30 28.75	2.6168	23 49 4.1	8.564
12	4 33 5.96	2.6236	23 57 33.1	8.401
13	4 35 43.58	2.6303	24 5 52.2	8.236
14	4 38 21.60	2.6370	24 14 1.4	8.069
15	4 41 0.02	2.6435	24 22 0.5	7.901
16	4 43 38.82	2.6499	24 29 49.5	7.731
17	4 46 18.01	2.6563	24 37 28.2	7.558
18	4 48 57.57	2.6624	24 44 56.5	7.385
19	4 51 37.50	2.6685	24 52 14.4	7.210
20	4 54 17.79	2.6745	24 59 21.7	7.033
21	4 56 58.44	2.6804	25 6 18.4	6.855
22	4 59 39.44	2.6861	25 13 4.3	6.675
23	5 2 20.77	2.6916	N.25 19 39.4	6.494
	THURSDAY 12.			
0	5 5 2.43	2.6971	N.25 26 3.6	6.312
1	5 7 44.42	2.7024	25 32 16.8	6.127
2	5 10 26.72	2.7075	25 38 18.8	5.941
3	5 13 9.32	2.7125	25 44 9.7	5.754
4	5 15 52.22	2.7174	25 49 49.3	5.566
5	5 18 35.41	2.7221	25 55 17.6	5.377
6	5 21 18.87	2.7266	26 0 34.5	5.186
7	5 24 2.60	2.7309	26 5 39.9	4.994
8	5 26 46.58	2.7351	26 10 33.8	4.802
9	5 29 30.81	2.7392	26 15 16.1	4.608
10	5 32 15.28	2.7430	26 19 46.7	4.412
11	5 34 59.97	2.7466	26 24 5.5	4.215
12	5 37 44.87	2.7501	26 28 12.5	4.018
13	5 40 29.98	2.7534	26 32 7.7	3.820
14	5 43 15.28	2.7565	26 35 50.9	3.621
15	5 46 0.76	2.7593	26 39 22.2	3.422
16	5 48 46.40	2.7620	26 42 41.5	3.221
17	5 51 32.20	2.7645	26 45 48.7	3.019
18	5 54 18.14	2.7668	26 48 43.8	2.818
19	5 57 4.22	2.7690	26 51 26.8	2.616
20	5 59 50.42	2.7709	26 53 57.7	2.413
21	6 2 36.73	2.7726	26 56 16.3	2.208
22	6 5 23.13	2.7740	26 58 22.7	2.005
23	6 8 9.61	2.7753	27 0 16.9	1.801
24	6 10 56.16	2.7763	N.27 1 58.8	1.596

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 13.			
	h m s	s	° ′ ″	″
0	6 10 56.16	2.7763	N.27 1 58.8	1.596
1	6 13 42.77	2.7773	27 3 28.4	1.391
2	6 16 29.43	2.7779	27 4 45.7	1.185
3	6 19 16.12	2.7783	27 5 50.6	0.980
4	6 22 2.82	2.7784	27 6 43.3	0.775
5	6 24 49.53	2.7784	27 7 23.6	0.569
6	6 27 36.23	2.7782	27 7 51.6	0.363
7	6 30 22.91	2.7778	27 8 7.2	+0.158
8	6 33 9.56	2.7771	27 8 10.5	−0.048
9	6 35 56.16	2.7763	27 8 1.5	0.253
10	6 38 42.71	2.7753	27 7 40.2	0.458
11	6 41 29.19	2.7739	27 7 6.6	0.663
12	6 44 15.58	2.7723	27 6 20.7	0.867
13	6 47 1.87	2.7707	27 5 22.6	1.071
14	6 49 48.06	2.7688	27 4 12.2	1.275
15	6 52 34.12	2.7665	27 2 49.6	1.478
16	6 55 20.04	2.7642	27 1 14.9	1.679
17	6 58 5.82	2.7617	26 59 28.1	1.881
18	7 0 51.44	2.7588	26 57 29.2	2.083
19	7 3 36.88	2.7558	26 55 18.2	2.283
20	7 6 22.14	2.7527	26 52 55.2	2.483
21	7 9 7.20	2.7493	26 50 20.2	2.683
22	7 11 52.06	2.7458	26 47 33.3	2.880
23	7 14 36.70	2.7420	N.26 44 34.6	3.077
	SATURDAY 14.			
0	7 17 21.10	2.7380	N.26 41 24.1	3.273
1	7 20 5.26	2.7338	26 38 1.8	3.468
2	7 22 49.16	2.7295	26 34 27.9	3.662
3	7 25 32.80	2.7250	26 30 42.4	3.855
4	7 28 16.16	2.7203	26 26 45.3	4.047
5	7 30 59.24	2.7155	26 22 36.8	4.238
6	7 33 42.02	2.7104	26 18 16.8	4.428
7	7 36 24.49	2.7053	26 13 45.5	4.615
8	7 39 6.65	2.6999	26 9 3.0	4.802
9	7 41 48.48	2.6944	26 4 9.3	4.987
10	7 44 29.98	2.6888	25 59 4.6	5.171
11	7 47 11.13	2.6828	25 53 48.8	5.354
12	7 49 51.92	2.6768	25 48 22.1	5.535
13	7 52 32.35	2.6707	25 42 44.6	5.714
14	7 55 12.40	2.6643	25 36 56.4	5.893
15	7 57 52.07	2.6580	25 30 57.5	6.069
16	8 0 31.36	2.6515	25 24 48.1	6.243
17	8 3 10.25	2.6448	25 18 28.3	6.417
18	8 5 48.73	2.6379	25 11 58.1	6.588
19	8 8 26.80	2.6310	25 5 17.7	6.758
20	8 11 4.45	2.6240	24 58 27.1	6.927
21	8 13 41.68	2.6168	24 51 26.5	7.093
22	8 16 18.47	2.6096	24 44 16.0	7.258
23	8 18 54.83	2.6023	24 36 55.6	7.421
24	8 21 30.74	2.5948	N.24 29 25.5	7.582

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 15.			
	h m s	s	° ′ ″	″
0	8 21 30.74	2.5948	N.24 29 25.5	7.582
1	8 24 6.20	2.5872	24 21 45.8	7.740
2	8 26 41.20	2.5796	24 13 56.7	7.897
3	8 29 15.75	2.5719	24 5 58.2	8.053
4	8 31 49.83	2.5641	23 57 50.4	8.206
5	8 34 23.44	2.5563	23 49 33.5	8.358
6	8 36 56.58	2.5483	23 41 7.5	8.508
7	8 39 29.24	2.5403	23 32 32.6	8.655
8	8 42 1.41	2.5322	23 23 48.9	8.801
9	8 44 33.10	2.5241	23 14 56.5	8.944
10	8 47 4.30	2.5158	23 5 55.6	9.086
11	8 49 35.00	2.5076	22 56 46.2	9.226
12	8 52 5.21	2.4993	22 47 28.5	9.363
13	8 54 34.92	2.4910	22 38 2.6	9.499
14	8 57 4.13	2.4827	22 28 28.6	9.633
15	8 59 32.84	2.4743	22 18 46.6	9.765
16	9 2 1.04	2.4658	22 8 56.8	9.894
17	9 4 28.74	2.4574	21 58 59.3	10.022
18	9 6 55.93	2.4489	21 48 54.1	10.148
19	9 9 22.61	2.4404	21 38 41.5	10.272
20	9 11 48.78	2.4319	21 28 21.5	10.393
21	9 14 14.44	2.4234	21 17 54.3	10.513
22	9 16 39.59	2.4149	21 7 19.9	10.631
23	9 19 4.23	2.4064	N.20 56 38.6	10.746
	MONDAY 16.			
0	9 21 28.36	2.3978	N.20 45 50.4	10.860
1	9 23 51.97	2.3893	20 34 55.4	10.972
2	9 26 15.08	2.3808	20 23 53.8	11.081
3	9 28 37.67	2.3723	20 12 45.7	11.188
4	9 30 59.76	2.3638	20 1 31.2	11.294
5	9 33 21.33	2.3553	19 50 10.4	11.398
6	9 35 42.40	2.3469	19 38 43.5	11.499
7	9 38 2.96	2.3384	19 27 10.5	11.599
8	9 40 23.01	2.3300	19 15 31.6	11.697
9	9 42 42.56	2.3216	19 3 46.9	11.793
10	9 45 1.60	2.3133	18 51 56.5	11.887
11	9 47 20.15	2.3050	18 40 0.5	11.979
12	9 49 38.20	2.2967	18 27 59.0	12.069
13	9 51 55.75	2.2884	18 15 52.2	12.156
14	9 54 12.81	2.2803	18 3 40.3	12.242
15	9 56 29.38	2.2721	17 51 23.2	12.327
16	9 58 45.46	2.2639	17 39 1.1	12.409
17	10 1 1.05	2.2558	17 26 34.1	12.489
18	10 3 16.15	2.2478	17 14 2.4	12.565
19	10 5 30.78	2.2398	17 1 26.0	12.645
20	10 7 44.93	2.2319	16 48 45.0	12.720
21	10 9 58.61	2.2240	16 35 59.6	12.793
22	10 12 11.81	2.2162	16 23 9.8	12.865
23	10 14 24.55	2.2084	16 10 15.8	12.934
24	10 16 36.82	2.2008	N.15 57 17.7	13.002

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 17.			
	h m s	s	° ′ ″	″
0	10 16 36.82	2.2008	N. 15 57 17.7	13.002
1	10 18 48.63	2.1931	15 44 15.6	13.068
2	10 20 59.99	2.1855	15 31 9.5	13.133
3	10 23 10.89	2.1779	15 17 59.6	13.195
4	10 25 21.34	2.1705	15 4 46.1	13.256
5	10 27 31.35	2.1631	14 51 29.0	13.315
6	10 29 40.91	2.1558	14 38 8.3	13.373
7	10 31 50.04	2.1486	14 24 44.2	13.429
8	10 33 58.74	2.1414	14 11 16.8	13.483
9	10 36 7.01	2.1343	13 57 46.2	13.536
10	10 38 14.85	2.1272	13 44 12.5	13.587
11	10 40 22.27	2.1203	13 30 35.8	13.637
12	10 42 29.28	2.1134	13 16 56.1	13.685
13	10 44 35.88	2.1066	13 3 13.6	13.731
14	10 46 42.07	2.0998	12 49 28.4	13.775
15	10 48 47.86	2.0932	12 35 40.6	13.818
16	10 50 53.25	2.0866	12 21 50.2	13.861
17	10 52 58.25	2.0802	12 7 57.3	13.901
18	10 55 2.87	2.0738	11 54 2.1	13.939
19	10 57 7.10	2.0673	11 40 4.6	13.977
20	10 59 10.95	2.0611	11 26 4.9	14.013
21	11 1 14.43	2.0549	11 12 3.1	14.047
22	11 3 17.54	2.0488	10 57 59.3	14.080
23	11 5 20.28	2.0428	N. 10 43 53.5	14.112
	WEDNESDAY 18.			
0	11 7 22.67	2.0369	N. 10 29 45.8	14.143
1	11 9 24.71	2.0311	10 15 36.4	14.171
2	11 11 26.40	2.0253	10 1 25.3	14.199
3	11 13 27.74	2.0196	9 47 12.5	14.226
4	11 15 28.75	2.0140	9 32 58.2	14.250
5	11 17 29.42	2.0084	9 18 42.5	14.273
6	11 19 29.76	2.0030	9 4 25.4	14.297
7	11 21 29.78	1.9978	8 50 6.9	14.318
8	11 23 29.49	1.9925	8 35 47.2	14.338
9	11 25 28.88	1.9873	8 21 26.4	14.356
10	11 27 27.96	1.9822	8 7 4.5	14.373
11	11 29 26.74	1.9772	7 52 41.6	14.390
12	11 31 25.22	1.9723	7 38 17.7	14.406
13	11 33 23.41	1.9675	7 23 52.9	14.419
14	11 35 21.32	1.9628	7 9 27.4	14.432
15	11 37 18.94	1.9581	6 55 1.1	14.444
16	11 39 16.29	1.9536	6 40 34.1	14.454
17	11 41 13.37	1.9490	6 26 6.6	14.463
18	11 43 10.17	1.9446	6 11 38.5	14.472
19	11 45 6.72	1.9403	5 57 10.0	14.479
20	11 47 3.01	1.9362	5 42 41.0	14.486
21	11 48 59.06	1.9321	5 28 11.7	14.490
22	11 50 54.86	1.9280	5 13 42.2	14.494
23	11 52 50.42	1.9240	4 59 12.4	14.498
24	11 54 45.74	1.9202	N. 4 44 42.5	14.499

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 19.			
	h m s	s	° ′ ″	″
0	11 54 45.74	1.9202	N. 4 44 42.5	14.499
1	11 56 40.84	1.9164	4 30 12.5	14.500
2	11 58 35.71	1.9127	4 15 42.5	14.500
3	12 0 30.36	1.9090	4 1 12.5	14.499
4	12 2 24.79	1.9055	3 46 42.6	14.497
5	12 4 19.02	1.9021	3 32 12.9	14.493
6	12 6 13.04	1.8988	3 17 43.4	14.490
7	12 8 6.87	1.8955	3 3 14.1	14.486
8	12 10 0.50	1.8923	2 48 45.1	14.479
9	12 11 53.95	1.8893	2 34 16.6	14.472
10	12 13 47.21	1.8862	2 19 48.5	14.465
11	12 15 40.29	1.8833	2 5 20.8	14.457
12	12 17 33.20	1.8804	1 50 53.7	14.447
13	12 19 25.94	1.8777	1 36 27.2	14.436
14	12 21 18.52	1.8751	1 22 1.4	14.425
15	12 23 10.95	1.8725	1 7 36.2	14.413
16	12 25 3.22	1.8699	0 53 11.8	14.400
17	12 26 55.34	1.8675	0 38 48.2	14.387
18	12 28 47.32	1.8652	0 24 25.4	14.372
19	12 30 39.16	1.8628	N. 0 10 3.5	14.357
20	12 32 30.86	1.8607	S. 0 4 17.4	14.341
21	12 34 22.44	1.8587	0 18 37.3	14.323
22	12 36 13.90	1.8567	0 32 56.1	14.305
23	12 38 5.24	1.8548	S. 0 47 13.9	14.287
	FRIDAY 20.			
0	12 39 56.47	1.8529	S. 1 1 30.5	14.267
1	12 41 47.59	1.8511	1 15 45.9	14.247
2	12 43 38.60	1.8494	1 30 0.1	14.227
3	12 45 29.52	1.8479	1 44 13.1	14.205
4	12 47 20.35	1.8463	1 58 24.7	14.182
5	12 49 11.08	1.8448	2 12 34.9	14.158
6	12 51 1.73	1.8435	2 26 43.7	14.135
7	12 52 52.30	1.8423	2 40 51.1	14.110
8	12 54 42.80	1.8411	2 54 56.9	14.084
9	12 56 33.23	1.8400	3 9 1.2	14.058
10	12 58 23.60	1.8390	3 23 3.9	14.031
11	13 0 13.91	1.8380	3 37 4.9	14.003
12	13 2 4.16	1.8371	3 51 4.3	13.976
13	13 3 54.36	1.8363	4 5 2.0	13.947
14	13 5 44.51	1.8355	4 18 57.9	13.917
15	13 7 34.62	1.8349	4 32 52.0	13.886
16	13 9 24.70	1.8344	4 46 44.2	13.854
17	13 11 14.75	1.8338	5 0 34.5	13.823
18	13 13 4.76	1.8333	5 14 22.9	13.791
19	13 14 54.75	1.8331	5 28 9.4	13.758
20	13 16 44.73	1.8328	5 41 53.8	13.723
21	13 18 34.69	1.8326	5 55 36.1	13.688
22	13 20 24.64	1.8325	6 9 16.4	13.653
23	13 22 14.59	1.8325	6 22 54.5	13.617
24	13 24 4.54	1.8325	S. 6 36 30.4	13.580

GREENWICH MEAN TIME.

THE MOON S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 21.			
	h m s	s	° ′ ″	″
0	13 24 4.54	1.8325	S. 6 36 30.4	13.580
1	13 25 54.49	1.8326	6 50 4.1	13.543
2	13 27 44.45	1.8328	7 3 35.5	13.505
3	13 29 34.43	1.8331	7 17 4.7	13.467
4	13 31 24.42	1.8333	7 30 31.5	13.428
5	13 33 14.43	1.8338	7 43 56.0	13.388
6	13 35 4.47	1.8343	7 57 18.0	13.347
7	13 36 54.54	1.8348	8 10 37.6	13.305
8	13 38 44.64	1.8353	8 23 54.6	13.263
9	13 40 34.78	1.8360	8 37 9.2	13.222
10	13 42 24.96	1.8368	8 50 21.2	13.178
11	13 44 15.19	1.8376	9 3 30.6	13.134
12	13 46 5.47	1.8385	9 16 37.3	13.089
13	13 47 55.81	1.8395	9 29 41.3	13.044
14	13 49 46.21	1.8405	9 42 42.6	12.998
15	13 51 36.67	1.8416	9 55 41.1	12.952
16	13 53 27.20	1.8428	10 8 36.8	12.905
17	13 55 17.81	1.8441	10 21 29.7	12.858
18	13 57 8.49	1.8453	10 34 19.7	12.809
19	13 58 59.25	1.8467	10 47 6.8	12.760
20	14 0 50.09	1.8481	10 59 50.9	12.710
21	14 2 41.02	1.8496	11 12 32.0	12.660
22	14 4 32.04	1.8512	11 25 10.1	12.609
23	14 6 23.16	1.8528	S. 11 37 45.1	12.557
	SUNDAY 22.			
0	14 8 14.38	1.8545	S. 11 50 16.9	12.504
1	14 10 5.70	1.8563	12 2 45.6	12.452
2	14 11 57.13	1.8581	12 15 11.1	12.398
3	14 13 48.67	1.8600	12 27 33.4	12.344
4	14 15 40.33	1.8620	12 39 52.4	12.289
5	14 17 32.11	1.8640	12 52 8.1	12.233
6	14 19 24.01	1.8660	13 4 20.4	12.177
7	14 21 16.03	1.8681	13 16 29.3	12.120
8	14 23 8.18	1.8703	13 28 34.8	12.063
9	14 25 0.47	1.8726	13 40 36.8	12.004
10	14 26 52.89	1.8748	13 52 35.3	11.946
11	14 28 45.45	1.8772	14 4 30.3	11.886
12	14 30 38.16	1.8797	14 16 21.6	11.825
13	14 32 31.01	1.8822	14 28 9.3	11.764
14	14 34 24.02	1.8848	14 39 53.3	11.703
15	14 36 17.18	1.8873	14 51 33.6	11.641
16	14 38 10.49	1.8899	15 3 10.2	11.578
17	14 40 3.97	1.8927	15 14 43.0	11.514
18	14 41 57.61	1.8954	15 26 11.9	11.450
19	14 43 51.42	1.8983	15 37 37.0	11.385
20	14 45 45.40	1.9011	15 48 58.1	11.319
21	14 47 39.55	1.9040	16 0 15.3	11.253
22	14 49 33.88	1.9069	16 11 28.5	11.186
23	14 51 28.38	1.9099	16 22 37.6	11.118
24	14 53 23.07	1.9131	S. 16 33 42.6	11.049

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 23.			
	h m s	s	° ′ ″	″
0	14 53 23.07	1.9131	S. 16 33 42.6	11.049
1	14 55 17.95	1.9162	16 44 43.5	10.981
2	14 57 13.01	1.9193	16 55 40.3	10.911
3	14 59 8.27	1.9226	17 6 32.8	10.840
4	15 1 3.72	1.9258	17 17 21.1	10.768
5	15 2 59.37	1.9291	17 28 5.0	10.696
6	15 4 55.21	1.9324	17 38 44.6	10.624
7	15 6 51.26	1.9359	17 49 19.9	10.551
8	15 8 47.52	1.9393	17 59 50.7	10.476
9	15 10 43.98	1.9428	18 10 17.0	10.401
10	15 12 40.65	1.9463	18 20 38.8	10.326
11	15 14 37.53	1.9498	18 30 56.1	10.249
12	15 16 34.63	1.9534	18 41 8.7	10.172
13	15 18 31.94	1.9571	18 51 16.7	10.094
14	15 20 29.48	1.9608	19 1 20.0	10.016
15	15 22 27.23	1.9644	19 11 18.6	9.937
16	15 24 25.21	1.9682	19 21 12.4	9.856
17	15 26 23.42	1.9720	19 31 1.3	9.775
18	15 28 21.85	1.9758	19 40 45.4	9.694
19	15 30 20.51	1.9797	19 50 24.6	9.612
20	15 32 19.41	1.9836	19 59 58.8	9.528
21	15 34 18.54	1.9875	20 9 28.0	9.444
22	15 36 17.91	1.9914	20 18 52.1	9.360
23	15 38 17.51	1.9953	S. 20 28 11.2	9.275
	TUESDAY 24.			
0	15 40 17.35	1.9993	S. 20 37 25.1	9.188
1	15 42 17.43	2.0033	20 46 33.8	9.102
2	15 44 17.75	2.0074	20 55 37.3	9.014
3	15 46 18.32	2.0115	21 4 35.5	8.926
4	15 48 19.13	2.0156	21 13 28.4	8.837
5	15 50 20.19	2.0198	21 22 15.9	8.747
6	15 52 21.50	2.0238	21 30 58.0	8.656
7	15 54 23.05	2.0279	21 39 34.6	8.564
8	15 56 24.85	2.0321	21 48 5.7	8.472
9	15 58 26.90	2.0363	21 56 31.2	8.379
10	16 0 29.21	2.0406	22 4 51.1	8.285
11	16 2 31.77	2.0448	22 13 5.4	8.190
12	16 4 34.58	2.0489	22 21 13.9	8.094
13	16 6 37.64	2.0532	22 29 16.7	7.998
14	16 8 40.96	2.0574	22 37 13.7	7.901
15	16 10 44.53	2.0617	22 45 4.8	7.803
16	16 12 48.36	2.0659	22 52 50.1	7.705
17	16 14 52.44	2.0701	23 0 29.4	7.605
18	16 16 56.77	2.0744	23 8 2.7	7.505
19	16 19 1.37	2.0787	23 15 30.0	7.404
20	16 21 6.22	2.0829	23 22 51.2	7.303
21	16 23 11.32	2.0872	23 30 6.3	7.200
22	16 25 16.68	2.0915	23 37 15.2	7.096
23	16 27 22.30	2.0958	23 44 17.8	6.992
24	16 29 28.17	2.1000	S. 23 51 14.2	6.888

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 25.			
	h m s	s	° ′ ″	″
0	16 29 28.17	2.1000	S. 23 51 14.2	6.888
1	16 31 34.30	2.1043	23 58 4.3	6.782
2	16 33 40.68	2.1084	24 4 48.0	6.675
3	16 35 47.31	2.1127	24 11 25.3	6.568
4	16 37 54.20	2.1169	24 17 56.1	6.459
5	16 40 1.34	2.1211	24 24 20.4	6.351
6	16 42 8.73	2.1253	24 30 38.2	6.242
7	16 44 16.37	2.1294	24 36 49.4	6.131
8	16 46 24.26	2.1336	24 42 53.9	6.020
9	16 48 32.40	2.1377	24 48 51.8	5.908
10	16 50 40.78	2.1418	24 54 42.9	5.795
11	16 52 49.41	2.1458	25 0 27.2	5.682
12	16 54 58.28	2.1499	25 6 4.7	5.568
13	16 57 7.40	2.1539	25 11 35.3	5.453
14	16 59 16.76	2.1579	25 16 59.0	5.338
15	17 1 26.35	2.1619	25 22 15.8	5.221
16	17 3 36.18	2.1658	25 27 25.5	5.103
17	17 5 46.25	2.1698	25 32 28.2	4.986
18	17 7 56.55	2.1736	25 37 23.8	4.868
19	17 10 7.08	2.1774	25 42 12.3	4.748
20	17 12 17.84	2.1812	25 46 53.6	4.628
21	17 14 28.82	2.1849	25 51 27.7	4.508
22	17 16 40.03	2.1887	25 55 54.5	4.386
23	17 18 51.46	2.1923	S. 26 0 14.0	4.264
	THURSDAY 26.			
0	17 21 3.11	2.1960	S. 26 4 26.2	4.142
1	17 23 14.98	2.1996	26 8 31.0	4.018
2	17 25 27.06	2.2031	26 12 28.4	3.894
3	17 27 39.35	2.2066	26 16 18.3	3.769
4	17 29 51.85	2.2100	26 20 0.7	3.643
5	17 32 4.55	2.2133	26 23 35.5	3.518
6	17 34 17.45	2.2167	26 27 2.8	3.392
7	17 36 30.55	2.2199	26 30 22.5	3.264
8	17 38 43.84	2.2232	26 33 34.5	3.137
9	17 40 57.33	2.2263	26 36 38.9	3.008
10	17 43 11.00	2.2293	26 39 35.5	2.879
11	17 45 24.85	2.2323	26 42 24.4	2.750
12	17 47 38.88	2.2353	26 45 5.5	2.619
13	17 49 53.09	2.2383	26 47 38.7	2.488
14	17 52 7.47	2.2411	26 50 4.1	2.358
15	17 54 22.02	2.2438	26 52 21.6	2.226
16	17 56 36.73	2.2465	26 54 31.2	2.093
17	17 58 51.60	2.2492	26 56 32.8	1.961
18	18 1 6.63	2.2518	26 58 26.5	1.828
19	18 3 21.81	2.2543	27 0 12.1	1.693
20	18 5 37.14	2.2567	27 1 49.7	1.559
21	18 7 52.61	2.2590	27 3 19.2	1.425
22	18 10 8.22	2.2613	27 4 40.7	1.290
23	18 12 23.96	2.2634	27 5 54.0	1.154
24	18 14 39.83	2.2656	S. 27 6 59.2	1.018

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 27.			
	h m s	s	° ′ ″	″
0	18 14 39.83	2.2656	S. 27 6 59.2	1.018
1	18 16 55.83	2.2676	27 7 56.2	0.883
2	18 19 11.94	2.2695	27 8 45.1	0.746
3	18 21 28.17	2.2714	27 9 25.7	0.608
4	18 23 44.51	2.2733	27 9 58.1	0.471
5	18 26 0.96	2.2750	27 10 22.2	0.333
6	18 28 17.51	2.2766	27 10 38.1	0.196
7	18 30 34.15	2.2782	27 10 45.7	−0.058
8	18 32 50.89	2.2797	27 10 45.0	+0.081
9	18 35 7.71	2.2810	27 10 36.0	0.219
10	18 37 24.61	2.2823	27 10 18.7	0.358
11	18 39 41.59	2.2836	27 9 53.0	0.498
12	18 41 58.64	2.2847	27 9 18.9	0.638
13	18 44 15.75	2.2857	27 8 36.4	0.778
14	18 46 32.92	2.2867	27 7 45.6	0.918
15	18 48 50.15	2.2876	27 6 46.4	1.057
16	18 51 7.43	2.2883	27 5 38.8	1.198
17	18 53 24.75	2.2890	27 4 22.8	1.338
18	18 55 42.11	2.2897	27 2 58.3	1.478
19	18 57 59.51	2.2902	27 1 25.4	1.618
20	19 0 16.93	2.2906	26 59 44.1	1.759
21	19 2 34.38	2.2910	26 57 54.3	1.900
22	19 4 51.85	2.2913	26 55 56.1	2.040
23	19 7 9.33	2.2914	S. 26 53 49.5	2.181
	SATURDAY 28.			
0	19 9 26.82	2.2915	S. 26 51 34.4	2.322
1	19 11 44.31	2.2915	26 49 10.9	2.462
2	19 14 1.80	2.2914	26 46 39.0	2.603
3	19 16 19.28	2.2913	26 43 58.6	2.743
4	19 18 36.75	2.2911	26 41 9.8	2.883
5	19 20 54.21	2.2908	26 38 12.6	3.023
6	19 23 11.64	2.2903	26 35 7.0	3.164
7	19 25 29.05	2.2898	26 31 52.9	3.304
8	19 27 46.42	2.2892	26 28 30.5	3.443
9	19 30 3.75	2.2885	26 24 59.7	3.583
10	19 32 21.04	2.2878	26 21 20.5	3.723
11	19 34 38.29	2.2870	26 17 32.9	3.863
12	19 36 55.48	2.2860	26 13 36.9	4.003
13	19 39 12.61	2.2851	26 9 32.6	4.141
14	19 41 29.69	2.2841	26 5 20.0	4.279
15	19 43 46.70	2.2828	26 0 59.1	4.418
16	19 46 3.63	2.2816	25 56 29.9	4.556
17	19 48 20.49	2.2803	25 51 52.4	4.693
18	19 50 37.27	2.2790	25 47 6.7	4.830
19	19 52 53.97	2.2776	25 42 12.8	4.968
20	19 55 10.58	2.2760	25 37 10.6	5.105
21	19 57 27.09	2.2744	25 32 0.2	5.241
22	19 59 43.51	2.2728	25 26 41.7	5.376
23	20 1 59.83	2.2711	25 21 15.1	5.512
24	20 4 16.04	2.2693	S. 25 15 40.3	5.648

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 29.			
	h m s	s	° ′ ″	″
0	20 4 16.04	2.2693	S. 25 15 40.3	5.648
1	20 6 32.14	2.2674	25 9 57.4	5.782
2	20 8 48.13	2.2655	25 4 6.5	5.916
3	20 11 4.00	2.2635	24 58 7.5	6.049
4	20 13 19.75	2.2614	24 52 0.6	6.182
5	20 15 35.37	2.2593	24 45 45.7	6.314
6	20 17 50.87	2.2572	24 39 22.9	6.446
7	20 20 6.23	2.2549	24 32 52.2	6.578
8	20 22 21.46	2.2527	24 26 13.6	6.709
9	20 24 36.55	2.2503	24 19 27.1	6.840
10	20 26 51.50	2.2480	24 12 32.8	6.969
11	20 29 6.31	2.2455	24 5 30.8	7.098
12	20 31 20.96	2.2430	23 58 21.1	7.226
13	20 33 35.47	2.2405	23 51 3.7	7.354
14	20 35 49.82	2.2378	23 43 38.6	7.482
15	20 38 4.01	2.2352	23 36 5.9	7.608
16	20 40 18.04	2.2325	23 28 25.7	7.733
17	20 42 31.91	2.2298	23 20 37.9	7.859
18	20 44 45.61	2.2270	23 12 42.6	7.983
19	20 46 59.15	2.2243	23 4 39.9	8.107
20	20 49 12.52	2.2214	22 56 29.8	8.229
21	20 51 25.72	2.2186	22 48 12.4	8.352
22	20 53 38.75	2.2157	22 39 47.6	8.473
23	20 55 51.60	2.2127	S. 22 31 15.6	8.593
	MONDAY 30.			
0	20 58 4.27	2.2097	S. 22 22 36.4	8.713
1	21 0 16.76	2.2067	22 13 50.0	8.833
2	21 2 29.07	2.2037	22 4 56.5	8.950
3	21 4 41.20	2.2007	21 55 56.0	9.068
4	21 6 53.15	2.1976	21 46 48.4	9.184
5	21 9 4.91	2.1944	21 37 33.9	9.300
6	21 11 16.48	2.1913	21 28 12.4	9.416
7	21 13 27.86	2.1882	21 18 44.0	9.529
8	21 15 39.06	2.1851	21 9 8.9	9.642
9	21 17 50.07	2.1819	20 59 27.0	9.754
10	21 20 0.89	2.1788	20 49 38.4	9.866
11	21 22 11.52	2.1755	20 39 43.1	9.977
12	21 24 21.95	2.1723	20 29 41.2	10.086
13	21 26 32.19	2.1691	20 19 32.8	10.194
14	21 28 42.24	2.1659	20 9 17.9	10.302
15	21 30 52.10	2.1627	19 58 56.6	10.408
16	21 33 1.76	2.1594	19 48 28.9	10.514
17	21 35 11.23	2.1563	19 37 54.9	10.619
18	21 37 20.51	2.1530	19 27 14.6	10.723
19	21 39 29.59	2.1498	19 16 28.1	10.826
20	21 41 38.48	2.1466	19 5 35.5	10.928
21	21 43 47.18	2.1434	18 54 36.8	11.029
22	21 45 55.69	2.1403	18 43 32.0	11.129
23	21 48 4.01	2.1370	18 32 21.3	11.228
24	21 50 12.13	2.1338	S. 18 21 4.7	11.325

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 31.			
	h m s	s	° ′ ″	″
0	21 50 12.13	2.1338	S. 18 21 4.7	11.325
1	21 52 20.06	2.1306	18 9 42.3	11.423
2	21 54 27.80	2.1274	17 58 14.0	11.519
3	21 56 35.35	2.1243	17 46 40.0	11.613
4	21 58 42.72	2.1213	17 35 0.4	11.707
5	22 0 49.90	2.1181	17 23 15.2	11.800
6	22 2 56.89	2.1150	17 11 24.4	11.892
7	22 5 3.70	2.1119	16 59 28.2	11.982
8	22 7 10.32	2.1088	16 47 26.6	12.072
9	22 9 16.76	2.1058	16 35 19.6	12.161
10	22 11 23.02	2.1028	16 23 7.3	12.248
11	22 13 29.10	2.0998	16 10 49.8	12.335
12	22 15 35.00	2.0969	15 58 27.1	12.421
13	22 17 40.73	2.0940	15 45 59.3	12.505
14	22 19 46.28	2.0911	15 33 26.5	12.588
15	22 21 51.66	2.0882	15 20 48.8	12.670
16	22 23 56.86	2.0853	15 8 6.1	12.752
17	22 26 1.90	2.0826	14 55 18.6	12.831
18	22 28 6.77	2.0798	14 42 26.4	12.910
19	22 30 11.48	2.0772	14 29 29.4	12.988
20	22 32 16.03	2.0744	14 16 27.8	13.065
21	22 34 20.41	2.0718	14 3 21.6	13.141
22	22 36 24.64	2.0692	13 50 10.9	13.216
23	22 38 28.71	2.0666	S. 13 36 55.7	13.289
	WEDNESDAY, FEBRUARY 1.			
0	22 40 32.63	2.0641	S. 13 23 36.2	13.361

PHASES OF THE MOON.

		d	h	m
☽	First Quarter . . . Jan.	7	18	20.4
○	Full Moon	14	10	26.0
☾	Last Quarter	21	18	20.8
●	New Moon	29	21	44.7

		d	h
☾	Perigee . . . . . Jan.	12	12.3
☾	Apogee	24	7.7

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
2	SUN	W.	21 5 37	3300	22 29 48	3284	23 54 18	3269	25 19 6	3255
	SATURN	E.	87 56 58	2852	86 23 37	2845	84 50 8	2838	83 16 29	2831
	α Arietis	E.	95 38 17	2932	94 6 39	2924	92 34 50	2916	91 2 51	2909
3	SUN	W.	32 27 6	3192	33 53 25	3180	35 19 58	3169	36 46 44	3158
	SATURN	E.	75 25 46	2792	73 51 7	2783	72 16 17	2775	70 41 16	2767
	α Arietis	E.	83 20 32	2870	81 47 35	2862	80 14 28	2855	78 41 12	2848
	Aldebaran	E.	113 41 27	2831	112 7 39	2822	110 33 40	2813	108 59 29	2804
4	SUN	W.	44 3 50	3104	45 31 55	3094	47 0 12	3085	48 28 42	3072
	SATURN	E.	62 43 28	2724	61 7 20	2716	59 31 1	2707	57 54 30	2697
	α Arietis	E.	70 52 28	2811	69 18 15	2804	67 43 53	2797	66 9 21	2791
	Aldebaran	E.	101 5 36	2758	99 30 13	2749	97 54 38	2740	96 18 51	2730
5	SUN	W.	55 54 35	3017	57 24 27	3006	58 54 32	2995	60 24 51	2983
	SATURN	E.	49 48 48	2650	48 11 1	2640	46 33 1	2630	44 54 47	2620
	α Arietis	E.	58 14 35	2759	56 39 13	2753	55 3 44	2748	53 28 8	2743
	Aldebaran	E.	88 16 45	2682	86 39 41	2672	85 2 24	2663	83 24 54	2653
6	SUN	W.	68 0 5	2924	69 31 53	2913	71 3 55	2901	72 36 13	2888
	SATURN	E.	36 40 12	2569	35 0 34	2559	33 20 42	2548	31 40 35	2536
	α Arietis	E.	45 28 42	2787	43 52 38	2726	42 16 33	2726	40 40 28	2727
	Aldebaran	E.	75 14 2	2602	73 35 10	2592	71 56 4	2582	70 16 44	2572
	Pollux	E.	119 13 55	2567	117 34 15	2557	115 54 21	2546	114 14 12	2535
7	SUN	W.	80 21 40	2826	81 55 34	2814	83 29 44	2801	85 4 11	2788
	Aldebaran	E.	61 56 32	2520	60 15 47	2510	58 34 47	2500	56 53 34	2490
	Pollux	E.	105 49 26	2477	104 7 40	2465	102 25 38	2453	100 43 19	2441
8	SUN	W.	93 0 39	2723	94 36 48	2711	96 13 13	2698	97 49 56	2685
	Fomalhaut	W.	49 54 20	2682	51 31 24	2655	53 9 5	2629	54 47 20	2606
	α Pegasi	W.	34 58 2	3764	36 13 42	3641	37 31 32	3530	38 51 23	3431
	Aldebaran	E.	48 24 5	2444	46 41 33	2436	44 58 50	2429	43 15 56	2422
	Pollux	E.	92 7 30	2382	90 23 29	2369	88 39 10	2357	86 54 34	2345
9	SUN	W.	105 57 44	2623	107 36 8	2611	109 14 48	2599	110 53 44	2588
	Fomalhaut	W.	63 6 7	2504	64 47 14	2487	66 28 46	2470	68 10 42	2453
	α Pegasi	W.	45 55 21	3065	47 24 14	3009	48 54 15	2959	50 25 19	2913
	Pollux	E.	78 7 16	2287	76 20 57	2276	74 34 22	2264	72 47 30	2253
	Regulus	E.	114 30 16	2300	112 44 16	2289	110 58 0	2277	109 11 26	2265
10	SUN	W.	119 12 17	2534	120 52 43	2524	122 33 23	2515	124 14 16	2506
	Fomalhaut	W.	76 45 48	2382	78 29 48	2371	80 14 5	2359	81 58 39	2348
	α Pegasi	W.	58 14 1	2729	59 50 3	2700	61 26 43	2674	63 3 58	2649
	SATURN	W.	18 46 4	2207	20 34 21	2197	22 22 53	2187	24 11 40	2178
	Pollux	E.	63 49 9	2201	62 0 43	2192	60 12 3	2182	58 23 8	2173
	Regulus	E.	100 14 29	2212	98 26 18	2202	96 37 53	2192	94 49 13	2183
11	Fomalhaut	W.	90 44 59	2306	92 30 50	2299	94 16 51	2294	96 2 59	2289
	α Pegasi	W.	71 17 54	2550	72 57 58	2535	74 38 23	2522	76 19 7	2510
	SATURN	W.	33 18 58	2136	35 9 2	2130	36 59 16	2124	38 49 40	2118
	α Arietis	W.	27 40 1	2497	29 21 19	2453	31 3 39	2413	32 46 55	2378

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
2	Sun	W.	26 44 11	3241	28 9 32	3228	29 35 9	3215	31 1 0	3203
	Saturn	E.	81 42 41	2823	80 8 43	2815	78 34 34	2807	77 0 15	2799
	α Arietis	E.	89 30 43	2901	87 58 25	2893	86 25 57	2885	84 53 19	2878
3	Sun	W.	38 13 43	3148	39 40 55	3137	41 8 20	3126	42 35 58	3115
	Saturn	E.	69 6 5	2759	67 30 43	2750	65 55 9	2741	64 19 24	2733
	α Arietis	E.	77 7 46	2841	75 34 11	2833	74 0 26	2826	72 26 32	2818
	Aldebaran	E.	107 25 6	2795	105 50 31	2786	104 15 45	2777	102 40 47	2767
4	Sun	W.	49 57 26	3061	51 26 23	3050	52 55 33	3039	54 24 57	3028
	Saturn	E.	56 17 46	2688	54 40 50	2679	53 3 42	2669	51 26 21	2660
	α Arietis	E.	64 34 41	2784	62 59 52	2778	61 24 55	2771	59 49 49	2765
	Aldebaran	E.	94 42 51	2721	93 6 39	2711	91 30 14	2701	89 53. 36	2692
5	Sun	W.	61 55 25	2972	63 26 13	2960	64 57 15	2948	66 28 33	2937
	Saturn	E.	43 16 19	2610	41 37 38	2600	39 58 43	2590	38 19 35	2580
	α Arietis	E.	51 52 25	2739	50 16 36	2735	48 40 42	2732	47 4 44	2729
	Aldebaran	E.	81 47 11	2643	80 9 14	2633	78 31 4	2623	76 52 40	2612
6	Sun	W.	74 8 47	2876	75 41 36	2864	77 14 41	2851	78 48 2	2838
	Saturn	E.	30 0 12	2525	28 19 34	2514	26 38 41	2503	24 57 32	2492
	α Arietis	E.	39 4 25	2730	37 28 25	2735	35 52 31	2743	34 16 48	2754
	Aldebaran	E.	68 37 10	2561	66 57 22	2551	65 17 20	2540	63 37 3	2530
	Pollux	E.	112 33 47	2523	110 53 6	2512	109 12 9	2500	107 30 56	2488
7	Sun	W.	86 38 55	2775	88 13 56	2762	89 49 13	2749	91 24 48	2736
	Aldebaran	E.	55 12 7	2480	53 30 26	2471	51 48 32	2462	50 6 25	2453
	Pollux	E.	99 0 44	2429	97 17 51	2417	95 34 41	2405	93 51 14	2394
8	Sun	W.	99 26 56	2672	101 4 13	2660	102 41 46	2647	104 19 37	2635
	Fomalhaut	W.	56 26 6	2584	58 5 23	2562	59 45 10	2542	61 25 25	2523
	α Pegasi	W.	40 13 4	3343	41 36 26	3263	43 1 21	3191	44 27 41	3124
	Aldebaran	E.	41 32 51	2415	39 49 37	2410	38 6 16	2405	36 22 49	2402
	Pollux	E.	85 9 41	2333	83 24 30	2322	81 39 3	2310	79 53 18	2298
9	Sun	W.	112 32 56	2576	114 12 24	2565	115 52 7	2554	117 32 5	2544
	Fomalhaut	W.	69 53 1	2438	71 35 42	2423	73 18 44	2409	75 2 6	2395
	α Pegasi	W.	51 57 21	2871	53 30 17	2831	55 4 5	2794	56 38 41	2760
	Pollux	E.	71 0 21	2242	69 12 56	2232	67 25 16	2221	65 37 20	2211
	Regulus	E.	107 24 35	2254	105 37 28	2243	103 50 4	2232	102 2 24	2222
10	Sun	W.	125 55 22	2497	127 36 40	2489	129 18 8	2482	130 59 46	2475
	Fomalhaut	W.	83 43 28	2338	85 28 32	2329	87 13 49	2321	88 59 18	2313
	α Pegasi	W.	64 41 47	2626	66 20 7	2604	67 58 56	2584	69 38 13	2566
	Saturn	W.	26 0 41	2169	27 49 56	2160	29 39 24	2151	31 29 5	2143
	Pollux	E.	56 34 0	2165	54 44 39	2157	52 55 5	2149	51 5 20	2141
	Regulus	E.	93 0 20	2174	91 11 13	2166	89 21 54	2158	87 32 22	2150
11	Fomalhaut	W.	97 49 14	2286	99 35 34	2283	101 21 59	2281	103 8 26	2281
	α Pegasi	W.	78 0 7	2499	79 41 23	2489	81 22 52	2481	83 4 32	2474
	Saturn	W.	40 40 12	2112	42 30 53	2107	44 21 42	2103	46 12 37	2099
	α Arietis	W.	34 31 1	2348	36 15 50	2324	38 1 15	2302	39 47 12	2283

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.	Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
11	Pollux E.	49 15 24	2134	47 25 17	2128	45 35 1	2122	43 44 35	2116
	Regulus E.	85 42 39	2143	83 52 45	2136	82 2 41	2130	80 12 28	2124
12	Fomalhaut W.	104 54 54	2281	106 41 22	2282	108 27 48	2284	110 14 11	2287
	α Pegasi W.	84 46 22	2469	86 28 19	2465	88 10 22	2462	89 52 29	2460
	SATURN W.	48 3 38	2096	49 54 44	2094	51 45 53	2092	53 37 5	2090
	α Arietis W.	41 33 38	2266	43 20 28	2251	45 7 39	2239	46 55 9	2229
	Pollux E.	34 30 40	2099	32 39 40	2097	30 48 36	2096	28 57 30	2096
	Regulus E.	70 59 28	2104	69 8 35	2102	67 17 39	2100	65 26 40	2099
	Spica E.	125 2 29	2106	123 11 39	2102	121 20 43	2099	119 29 43	2098
13	α Pegasi W.	98 23 1	2472	100 4 53	2479	101 46 35	2487	103 28 6	2497
	SATURN W.	62 53 22	2092	64 44 33	2094	66 35 41	2098	68 26 44	2102
	α Arietis W.	55 55 46	2199	57 44 16	2196	59 32 50	2195	61 21 25	2194
	Aldebaran W.	25 31 59	2268	27 18 45	2251	29 5 56	2237	30 53 29	2225
	Regulus E.	56 11 47	2105	54 20 56	2108	52 30 9	2112	50 39 28	2117
	Spica E.	110 14 20	2098	108 23 18	2100	106 32 19	2103	104 41 24	2106
14	SATURN W.	77 40 13	2129	79 30 28	2137	81 20 31	2145	83 10 22	2154
	α Arietis W.	70 23 54	2209	72 12 8	2215	74 0 13	2221	75 48 9	2228
	Aldebaran W.	39 54 10	2206	41 42 29	2207	43 30 46	2210	45 18 58	2214
	Regulus E.	41 28 21	2154	39 38 44	2163	37 49 21	2174	36 0 14	2186
	Spica E.	95 28 27	2133	93 38 18	2141	91 48 21	2149	89 58 36	2157
	JUPITER E.	114 0 14	2160	112 10 46	2167	110 21 29	2175	108 32 24	2184
15	SATURN W.	92 16 0	2206	94 4 19	2218	95 52 20	2230	97 40 3	2243
	α Arietis W.	84 44 45	2276	86 31 20	2288	88 17 37	2300	90 3 36	2313
	Aldebaran W.	54 17 54	2251	56 5 6	2260	57 52 4	2271	59 38 46	2282
	Spica E.	80 53 22	2209	79 5 8	2221	77 17 12	2234	75 29 35	2247
	JUPITER E.	99 30 30	2236	97 42 56	2248	95 55 39	2260	94 8 41	2273
16	SATURN W.	106 33 31	2315	108 19 8	2331	110 4 23	2347	111 49 15	2363
	α Arietis W.	98 48 34	2387	100 32 29	2403	102 16 0	2420	103 59 7	2437
	Aldebaran W.	68 27 53	2347	70 12 44	2362	71 57 14	2377	73 41 22	2392
	Pollux W.	24 13 56	2322	25 59 23	2336	27 44 30	2350	29 29 17	2365
	Spica E.	66 36 34	2320	64 51 3	2336	63 5 55	2352	61 21 11	2368
	JUPITER E.	85 18 49	2344	83 33 55	2359	81 49 22	2375	80 5 12	2392
	Antares E.	112 29 4	2312	110 43 22	2326	108 58 1	2342	107 13 3	2359
17	Aldebaran W.	82 16 24	2474	83 58 14	2491	85 39 40	2508	87 20 42	2525
	Pollux W.	38 7 39	2445	39 50 10	2461	41 32 18	2478	43 14 2	2496
	Spica E.	52 43 33	2455	51 1 17	2473	49 19 26	2492	47 38 1	2511
	JUPITER E.	71 30 17	2476	69 48 30	2494	68 7 8	2512	66 26 11	2529
	Antares E.	98 34 9	2442	96 51 34	2460	95 9 24	2477	93 27 38	2494
	MARS E.	109 21 26	2674	107 44 11	2692	106 7 20	2710	104 30 54	2729
18	Aldebaran W.	95 39 44	2615	97 18 19	2633	98 56 29	2651	100 34 15	2669
	Pollux W.	51 36 36	2583	53 15 54	2600	54 54 49	2618	56 33 19	2635
	Spica E.	39 17 33	2607	37 38 47	2627	36 0 29	2647	34 22 38	2668
	JUPITER E.	58 7 31	2618	56 29 0	2636	54 50 54	2654	53 13 12	2672
	Antares E.	85 4 59	2583	83 25 41	2601	81 46 47	2618	80 8 17	2636
	MARS E.	96 34 55	2823	95 0 57	2842	93 27 23	2860	91 54 13	2879

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
11	Pollux	E.	41 54 0	2111	40 3 18	2107	38 12 30	2104	36 21 37	2101
	Regulus	E.	78 22 6	2119	76 31 36	2115	74 40 59	2111	72 50 16	2107
12	Fomalhaut	W.	112 0 29	2292	113 46 40	2298	115 32 42	2305	117 18 33	2313
	α Pegasi	W.	91 34 39	2460	93 16 49	2461	94 58 57	2463	96 41 2	2467
	Saturn	W.	55 28 20	2089	57 19 36	2089	59 10 52	2089	61 2 8	2090
	α Arietis	W.	48 42 54	2220	50 30 52	2212	52 19 2	2206	54 7 21	2202
	Pollux	E.	27 6 24	2097	25 15 20	2099	23 24 20	2102	21 33 25	2107
	Regulus	E.	63 35 40	2099	61 44 40	2100	59 53 40	2101	58 2 42	2103
	Spica	E.	117 38 40	2097	115 47 35	2096	113 56 30	2096	112 5 24	2097
13	α Pegasi	W.	105 9 23	2509	106 50 24	2522	108 31 7	2537	110 11 29	2553
	Saturn	W.	70 17 40	2106	72 8 30	2111	73 59 13	2116	75 49 48	2122
	α Arietis	W.	63 10 1	2196	64 58 35	2198	66 47 6	2200	68 35 33	2204
	Aldebaran	W.	32 41 19	2216	34 29 22	2211	36 17 33	2207	38 5 50	2205
	Regulus	E.	48 48 55	2123	46 58 31	2129	45 8 16	2136	43 18 12	2145
	Spica	E.	102 50 34	2110	100 59 50	2115	99 9 14	2120	97 18 46	2126
14	Saturn	W.	84 59 59	2163	86 49 22	2173	88 38 31	2183	90 27 24	2194
	α Arietis	W.	77 35 55	2236	79 23 28	2245	81 10 48	2255	82 57 54	2265
	Aldebaran	W.	47 7 4	2220	48 55 2	2227	50 42 50	2234	52 30 28	2242
	Regulus	E.	34 11 26	2199	32 22 57	2214	30 34 50	2230	28 47 7	2247
	Spica	E.	88 9 3	2166	86 19 44	2176	84 30 41	2186	82 41 53	2197
	Jupiter	E.	106 43 32	2193	104 54 54	2203	103 6 30	2213	101 18 22	2224
15	Saturn	W.	99 27 26	2257	101 14 29	2271	103 1 11	2285	104 47 32	2300
	α Arietis	W.	91 49 17	2326	93 34 38	2340	95 19 38	2355	97 4 17	2370
	Aldebaran	W.	61 25 12	2294	63 11 20	2307	64 57 10	2320	66 42 41	2333
	Spica	E.	73 42 17	2260	71 55 19	2274	70 8 43	2289	68 22 28	2304
	Jupiter	E.	92 22 2	2287	90 35 43	2301	88 49 44	2315	87 4 6	2329
16	Saturn	W.	113 33 43	2380	115 17 47	2396	117 1 28	2413	118 44 44	2430
	α Arietis	W.	105 41 49	2455	107 24 6	2473	109 5 58	2491	110 47 24	2510
	Aldebaran	W.	75 25 8	2408	77 8 31	2424	78 51 32	2440	80 34 10	2457
	Pollux	W.	31 13 42	2380	32 57 45	2396	34 41 26	2412	36 24 44	2428
	Spica	E.	59 36 50	2385	57 52 54	2402	56 9 22	2419	54 26 15	2437
	Jupiter	E.	78 21 26	2408	76 38 3	2425	74 55 4	2442	73 12 28	2459
	Antares	E.	105 28 29	2375	103 44 18	2391	102 0 31	2408	100 17 8	2425
17	Aldebaran	W.	89 1 20	2543	90 41 33	2561	92 21 21	2579	94 0 45	2597
	Pollux	W.	44 55 21	2513	46 36 16	2530	48 16 47	2548	49 56 54	2566
	Spica	E.	45 57 3	2530	44 16 31	2549	42 36 25	2568	40 56 46	2587
	Jupiter	E.	64 45 38	2547	63 5 30	2564	61 25 46	2582	59 46 26	2600
	Antares	E.	91 46 16	2512	90 5 19	2530	88 24 47	2548	86 44 41	2566
	Mars	E.	102 54 53	2748	101 19 17	2766	99 44 5	2785	98 9 18	2804
18	Aldebaran	W.	102 11 36	2687	103 48 33	2704	105 25 7	2722	107 1 17	2740
	Pollux	W.	58 11 26	2652	59 49 10	2670	61 26 30	2687	63 3 27	2704
	Spica	E.	32 45 14	2689	31 8 19	2709	29 31 51	2730	27 55 51	2753
	Jupiter	E.	51 35 54	2689	49 59 0	2706	48 22 28	2723	46 46 18	2741
	Antares	E.	78 30 11	2654	76 52 29	2671	75 15 11	2688	73 38 15	2705
	Mars	E.	90 21 27	2898	88 49 5	2916	87 17 6	2934	85 45 31	2952

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
18	SUN	E.	133 18 23	2954	131 47 12	2972	130 16 24	2990	128 45 59	3008
19	Aldebaran	W.	108 37 4	2758	110 12 27	2775	111 47 28	2792	113 22 6	2810
	Pollux	W.	64 40 2	2721	66 16 14	2737	67 52 5	2753	69 27 34	2769
	Regulus	W.	28 29 21	2773	30 4 24	2785	31 39 12	2796	33 13 45	2808
	JUPITER	E.	45 10 32	2757	43 35 8	2774	42 0 6	2790	40 25 25	2807
	Antares	E.	72 1 42	2722	70 25 31	2739	68 49 43	2755	67 14 16	2772
	MARS	E.	84 14 18	2970	82 43 28	2988	81 13 0	3005	79 42 53	3022
	SUN	E.	121 19 25	3097	119 51 12	3114	118 23 20	3132	116 55 49	3149
20	Pollux	W.	77 19 54	2845	78 53 24	2859	80 26 35	2873	81 59 29	2886
	Regulus	W.	41 2 24	2872	42 35 18	2884	44 7 57	2897	45 40 20	2909
	JUPITER	E.	32 37 12	2883	31 4 32	2898	29 32 10	2912	28 0 6	2926
	Antares	E.	59 22 14	2848	57 48 49	2862	56 15 43	2876	54 42 54	2890
	MARS	E.	72 17 31	3104	70 49 26	3119	69 21 39	3133	67 54 10	3148
	SUN	E.	109 43 15	3230	108 17 41	3245	106 52 25	3260	105 27 27	3274
21	Pollux	W.	89 39 49	2947	91 11 7	2958	92 42 12	2969	94 13 3	2979
	Regulus	W.	53 18 32	2965	54 49 28	2975	56 20 12	2985	57 50 43	2995
	JUPITER	E.	20 23 59	2989	18 53 33	3001	17 23 21	3012	15 53 23	3023
	Antares	E.	47 3 3	2954	45 31 52	2965	44 0 55	2976	42 30 12	2987
	MARS	E.	60 40 58	3214	59 15 6	3226	57 49 28	3237	56 24 3	3248
	SUN	E.	98 26 40	3341	97 3 16	3353	95 40 5	3364	94 17 8	3375
22	Pollux	W.	101 44 23	3022	103 14 8	3030	104 43 43	3037	106 13 10	3043
	Regulus	W.	65 20 32	3035	66 50 1	3042	68 19 21	3049	69 48 33	3055
	Antares	E.	34 59 48	3034	33 30 18	3043	32 0 58	3051	30 31 48	3058
	SUN	E.	87 25 18	3423	86 3 27	3431	84 41 46	3438	83 20 13	3445
23	Pollux	W.	113 38 40	3068	115 7 29	3071	116 36 14	3074	118 4 55	3077
	Regulus	W.	77 12 52	3078	78 41 28	3081	80 10 0	3084	81 38 29	3087
	Spica	W.	23 17 52	3130	24 45 25	3127	26 13 2	3124	27 40 42	3122
	SUN	E.	76 34 14	3472	75 13 19	3476	73 52 29	3480	72 31 42	3483
24	Regulus	W.	89 0 22	3091	90 28 42	3091	91 57 2	3090	93 25 23	3089
	Spica	W.	34 59 46	3110	36 27 43	3108	37 55 43	3105	39 23 46	3102
	JUPITER	W.	15 8 43	3123	16 36 25	3122	18 4 8	3120	19 31 53	3118
	SUN	E.	65 48 29	3490	64 27 54	3491	63 7 20	3490	61 46 45	3489
25	Regulus	W.	100 47 40	3077	102 16 17	3074	103 44 58	3070	105 13 44	3066
	Spica	W.	46 45 2	3084	48 13 31	3079	49 42 6	3074	51 10 47	3069
	JUPITER	W.	26 51 22	3104	28 19 27	3100	29 47 37	3095	31 15 53	3091
	SUN	E.	55 3 29	3480	53 42 43	3477	52 21 53	3473	51 0 59	3470
26	Regulus	W.	112 38 57	3041	114 8 19	3035	115 37 49	3029	117 7 26	3022
	Spica	W.	58 35 51	3040	60 5 14	3033	61 34 46	3026	63 4 26	3019
	JUPITER	W.	38 38 44	3062	40 7 40	3056	41 36 43	3049	43 5 55	3043
	SUN	E.	44 15 22	3447	42 53 59	3442	41 32 31	3437	40 10 56	3432
27	Spica	W.	70 35 6	2980	72 5 44	2971	73 36 32	2962	75 7 32	2954
	JUPITER	W.	50 34 9	3004	52 4 17	2995	53 34 36	2986	55 5 6	2977
	SUN	E.	33 21 37	3407	31 59 28	3403	30 37 15	3399	29 14 57	3396

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month	Name and Direction of Object		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
18	Sun	E.	127 15 56	3026	125 46 15	3044	124 16 57	3061	122 48 0	3079
19	Aldebaran	W.	114 56 21	2827	116 30 14	2843	118 3 46	2859	119 36 57	2876
	Pollux	W.	71 2 43	2785	72 37 31	2800	74 11 58	2815	75 46 6	2831
	Regulus	W.	34 48 2	2821	36 22 2	2834	37 55 46	2847	39 29 13	2860
	Jupiter	E.	38 51 6	2823	37 17 8	2838	35 43 29	2854	34 10 11	2869
	Antares	E.	65 39 11	2788	64 4 27	2803	62 30 2	2818	60 55 58	2833
	Mars	E.	78 13 8	3039	76 43 43	3056	75 14 39	3072	73 45 55	3088
	Sun	E.	115 28 39	3166	114 1 49	3182	112 35 19	3198	111 9 8	3214
20	Pollux	W.	83 32 5	2899	85 4 25	2912	86 36 28	2924	88 8 16	2936
	Regulus	W.	47 12 28	2920	48 44 21	2932	50 15 59	2943	51 47 22	2954
	Jupiter	E.	26 28 20	2939	24 56 51	2952	23 25 38	2965	21 54 41	2977
	Antares	E.	53 10 23	2903	51 38 9	2916	50 6 11	2929	48 34 29	2942
	Mars	E.	66 26 59	3162	65 0 5	3176	63 33 27	3189	62 7 5	3202
	Sun	E.	104 2 46	3288	102 38 21	3302	101 14 12	3315	99 50 19	3328
21	Pollux	W.	95 43 42	2989	97 14 9	2998	98 44 24	3006	100 14 29	3014
	Regulus	W.	59 21 2	3004	60 51 10	3013	62 21 7	3021	63 50 54	3028
	Jupiter	E.	14 23 39	3034	12 54 8	3046	11 24 52	3059	9 55 52	3072
	Antares	E.	40 59 43	2997	39 29 26	3007	37 59 22	3016	36 29 29	3025
	Mars	E.	54 58 51	3259	53 33 51	3269	52 9 4	3279	50 44 28	3289
	Sun	E.	92 54 23	3386	91 31 50	3396	90 9 29	3405	88 47 19	3415
22	Pollux	W.	107 42 29	3049	109 11 41	3054	110 40 46	3059	112 9 46	3064
	Regulus	W.	71 17 37	3060	72 46 35	3065	74 15 26	3070	75 44 12	3074
	Antares	E.	29 2 47	3066	27 33 56	3073	26 5 14	3080	24 36 41	3087
	Sun	E.	81 58 48	3452	80 37 30	3458	79 16 19	3463	77 55 14	3468
23	Pollux	W.	119 33 33	3079	121 2 8	3080	122 30 42	3081	123 59 14	3082
	Regulus	W.	83 6 55	3088	84 35 19	3090	86 3 41	3091	87 32 2	3091
	Spica	W.	29 8 25	3119	30 36 11	3117	32 4 0	3115	33 31 52	3113
	Sun	E.	71 10 59	3486	69 50 19	3488	68 29 41	3489	67 9 4	3490
24	Regulus	W.	94 53 46	3088	96 22 10	3086	97 50 37	3083	99 19 7	3080
	Spica	W.	40 51 53	3099	42 20 3	3096	43 48 18	3092	45 16 38	3088
	Jupiter	W.	20 59 40	3116	22 27 30	3113	23 55 24	3110	25 23 21	3107
	Sun	E.	60 26 9	3488	59 5 32	3487	57 44 53	3485	56 24 12	3483
25	Regulus	W.	106 42 35	3062	108 11 31	3057	109 40 33	3052	111 9 42	3047
	Spica	W.	52 39 34	3064	54 8 28	3059	55 37 28	3053	57 6 36	3047
	Jupiter	W.	32 44 14	3086	34 12 41	3080	35 41 15	3074	37 9 56	3068
	Sun	E.	49 40 1	3466	48 18 59	3462	46 57 52	3457	45 36 40	3452
26	Regulus	W.	118 37 11	3016	120 7 4	3009	121 37 6	3002	123 7 16	2995
	Spica	W.	64 34 15	3012	66 4 13	3004	67 34 21	2996	69 4 39	2988
	Jupiter	W.	44 35 15	3035	46 4 44	3027	47 34 23	3020	49 4 11	3012
	Sun	E.	38 49 16	3427	37 27 30	3422	36 5 38	3417	34 43 40	3412
27	Spica	W.	76 38 42	2945	78 10 4	2936	79 41 36	2927	81 13 20	2918
	Jupiter	W.	56 35 47	2969	58 6 39	2960	59 37 42	2951	61 8 57	2942
	Sun	E.	27 52 36	3394	26 30 12	3393	25 7 47	3392	23 45 21	3392

AT GREENWICH APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Semi-diameter.	Sidereal Time of Semi-diameter Passing Meridian.	Equation of Time, to be Added to Apparent Time.	Diff. for 1 Hour.
		h m s	s	° ′ ″	″	′ ″	s	m s	s
Wed.	1	20 55 59.50	+ 10.221	S. 17 19 56.6	+ 42.10	16 15.67	68.33	13 39.42	0.363
Thur.	2	21 0 4.38	10.186	17 2 57.1	42.86	16 15.53	68.22	13 47.72	0.328
Frid.	3	21 4 8.42	10.151	16 45 39.6	43.60	16 15.38	68.10	13 55.18	0.294
Sat.	4	21 8 11.62	+ 10.116	16 28 4.6	+ 44.32	16 15.22	67.99	14 1.81	0.259
SUN.	5	21 12 13.99	10.081	16 10 12.6	45.02	16 15.07	67.87	14 7.60	0.224
Mon.	6	21 16 15.52	10.046	15 52 4.0	45.70	16 14.92	67.76	14 12.56	0.190
Tues.	7	21 20 16.21	+ 10.012	15 33 39.2	+ 46.37	16 14.76	67.64	14 16.69	0.155
Wed.	8	21 24 16.08	9.978	15 14 58.6	47.02	16 14.59	67.53	14 20.00	0.121
Thur.	9	21 28 15.14	9.944	14 56 2.6	47.65	16 14.42	67.42	14 22.49	0.087
Frid.	10	21 32 13.39	+ 9.910	14 36 51.6	+ 48.26	16 14.25	67.31	14 24.17	0.054
Sat.	11	21 36 10.83	9.877	14 17 26.1	48.86	16 14.07	67.20	14 25.05	0.021
SUN.	12	21 40 7.48	9.845	13 57 46.4	49.44	16 13.89	67.08	14 25.15	0.012
Mon.	13	21 44 3.36	+ 9.813	13 37 53.0	+ 50.00	16 13.70	66.97	14 24.48	0.044
Tues.	14	21 47 58.49	9.782	13 17 46.3	50.55	16 13.50	66.87	14 23.06	0.075
Wed.	15	21 51 52.87	9.751	12 57 26.6	51.08	16 13.30	66.76	14 20.89	0.105
Thur.	16	21 55 46.52	+ 9.721	12 36 54.4	+ 51.60	16 13.10	66.66	14 18.00	0.135
Frid.	17	21 59 39.46	9.691	12 16 10.0	52.10	16 12.90	66.56	14 14.39	0.165
Sat.	18	22 3 31.70	9.662	11 55 13.8	52.58	16 12.69	66.45	14 10.09	0.194
SUN.	19	22 7 23.26	+ 9.634	11 34 6.3	+ 53.05	16 12.48	66.35	14 5.10	0.222
Mon.	20	22 11 14.14	9.606	11 12 47.8	53.50	16 12.26	66.25	13 59.44	0.249
Tues.	21	22 15 4.36	9.579	10 51 18.6	53.93	16 12.03	66.16	13 53.13	0.276
Wed.	22	22 18 53.94	+ 9.553	10 29 39.2	+ 54.35	16 11.80	66.06	13 46.18	0.302
Thur.	23	22 22 42.90	9.527	10 7 50.1	54.75	16 11.58	65.97	13 38.60	0.328
Frid.	24	22 26 31.25	9.502	9 45 51.6	55.13	16 11.36	65.88	13 30.42	0.353
Sat.	25	22 30 19.01	+ 9.478	9 23 44.2	+ 55.49	16 11.13	65.79	13 21.64	0.378
SUN.	26	22 34 6.18	9.454	9 1 28.2	55.84	16 10.89	65.71	13 12.28	0.402
Mon.	27	22 37 52.78	9.430	8 39 4.1	56.17	16 10.65	65.63	13 2.36	0.425
Tues.	28	22 41 38.82	9.407	8 16 32.3	56.48	16 10.42	65.55	12 51.88	0.448
Wed.	29	22 45 24.32	+ 9.385	S. 7 53 53.2	+ 56.77	16 10.18	65.47	12 40.85	0.470

NOTE.—The mean time of semidiameter passing the meridian may be found by subtracting 0s.18 from the sidereal time.
The sign + prefixed to the hourly change of declination indicates that south declinations are decreasing.

AT GREENWICH MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Equation of Time, to be Subtracted from Mean Time.	Diff. for 1 Hour.	Sidereal Time, or Right Ascension of Mean Sun.
		h m s	s	° ′ ″	″	m s	s	h m s
Wed.	1	20 55 57.18	+ 10.220	S. 17 20 6.2	+ 42.09	13 39.34	− 0.363	20 42 17.84
Thur.	2	21 0 2.04	10.185	17 3 6.9	42.84	13 47.65	0.328	20 46 14.40
Frid.	3	21 4 6.07	10.150	16 45 49.7	43.58	13 55.12	0.294	20 50 10.96
Sat.	4	21 8 9.26	+ 10.115	16 28 15.0	+ 44.30	14 1.75	− 0.259	20 54 7.51
SUN.	5	21 12 11.62	10.081	16 10 23.2	45.00	14 7.55	0.224	20 58 4.07
Mon.	6	21 16 13.14	10.046	15 52 14.8	45.69	14 12.52	0.190	21 2 0.62
Tues.	7	21 20 13.83	+ 10.012	15 33 50.2	+ 46.36	14 16.65	− 0.155	21 5 57.18
Wed.	8	21 24 13.70	9.978	15 15 9.7	47.01	14 19.96	0.121	21 9 53.74
Thur.	9	21 28 12.75	9.944	14 56 13.9	47.64	14 22.46	0.087	21 13 50.29
Frid.	10	21 32 11.00	+ 9.910	14 37 3.1	+ 48.26	14 24.15	− 0.054	21 17 46.85
Sat.	11	21 36 8.45	9.877	14 17 37.8	48.85	14 25.05	− 0.021	21 21 43.40
SUN.	12	21 40 5.12	9.845	13 57 58.3	49.43	14 25.16	+ 0.012	21 25 39.96
Mon.	13	21 44 1.01	+ 9.813	13 38 5.0	+ 50.00	14 24.50	+ 0.044	21 29 36.51
Tues.	14	21 47 56.14	9.781	13 17 58.4	50.55	14 23.08	0.075	21 33 33.07
Wed.	15	21 51 50.54	9.751	12 57 38.8	51.08	14 20.92	0.105	21 37 29.62
Thur.	16	21 55 44.21	+ 9.721	12 37 6.7	+ 51.60	14 18.03	+ 0.135	21 41 26.18
Frid.	17	21 59 37.16	9.692	12 16 22.4	52.10	14 14.43	0.165	21 45 22.73
Sat.	18	22 3 29.42	9.663	11 55 26.3	52.58	14 10.13	0.194	21 49 19.29
SUN.	19	22 7 21.00	+ 9.635	11 34 18.7	+ 53.04	14 5.15	+ 0.222	21 53 15.84
Mon.	20	22 11 11.90	9.607	11 13 0.2	53.49	13 59.50	0.249	21 57 12.40
Tues.	21	22 15 2.15	9.580	10 51 31.1	53.93	13 53.19	0.276	22 1 8.95
Wed.	22	22 18 51.75	+ 9.554	10 29 51.7	+ 54.35	13 46.25	+ 0.302	22 5 5.51
Thur.	23	22 22 40.73	9.528	10 8 2.5	54.75	13 38.68	0.328	22 9 2.06
Frid.	24	22 26 29.11	9.503	9 46 4.0	55.13	13 30.50	0.353	22 12 58.62
Sat.	25	22 30 16.90	+ 9.479	9 23 56.5	+ 55.49	13 21.73	+ 0.378	22 16 55.17
SUN.	26	22 34 4.10	9.455	9 1 40.5	55.84	13 12.38	0.402	22 20 51.72
Mon.	27	22 37 50.73	9.431	8 39 16.3	56.17	13 2.46	0.425	22 24 48.28
Tues.	28	22 41 36.81	9.408	8 16 44.4	56.48	12 51.98	0.448	22 28 44.83
Wed.	29	22 45 22.34	+ 9.386	S. 7 54 5.3	+ 56.78	12 40.96	+ 0.470	22 32 41.39

NOTE.—The semidiameter for mean noon may be assumed the same as that for apparent noon.
The sign + prefixed to the hourly change of declination indicates that south declinations are decreasing.

Diff. for 1 Hour, +9s.8565. (Table III.)

AT GREENWICH MEAN NOON.

Day of the Month.	Day of the Year.	THE SUN'S TRUE LONGITUDE. λ	THE SUN'S TRUE LONGITUDE. λ′	Diff. for 1 Hour.	LATITUDE.	Logarithm of the Radius Vector of the Earth.	Diff. for 1 Hour.	Mean Time of Sidereal Noon.
		° ′ ″	′ ″	″	″			h m s
1	32	311 31 55.7	32 2.1	152.27	− 0.68	9.993 6530	+ 25.9	3 17 9.77
2	33	312 32 49.6	32 55.8	152.22	0.61	9.993 7160	26.5	3 13 13.86
3	34	313 33 42.2	33 48.2	152.16	0.53	9.993 7804	27.1	3 9 17.95
4	35	314 34 33.4	34 39.3	152.10	− 0.41	9.993 8462	+ 27.8	3 5 22.04
5	36	315 35 23.2	35 28.9	152.04	0.29	9.993 9136	28.5	3 1 26.13
6	37	316 36 11.5	36 17.0	151.98	0.16	9.993 9827	29.2	2 57 30.22
7	38	317 36 58.2	37 3.6	151.92	− 0.02	9.994 0536	+ 30.0	2 53 34.31
8	39	318 37 43.4	37 48.6	151.85	+ 0.10	9.994 1264	30.8	2 49 38.40
9	40	319 38 27.0	38 32.1	151.78	0.21	9.994 2013	31.7	2 45 42.49
10	41	320 39 9.0	39 14.0	151.72	+ 0.28	9.994 2783	+ 32.6	2 41 46.58
11	42	321 39 49.4	39 54.3	151.66	0.33	9.994 3575	33.5	2 37 50.67
12	43	322 40 28.4	40 33.1	151.59	0.36	9.994 4390	34.4	2 33 54.76
13	44	323 41 5.9	41 10.5	151.53	+ 0.36	9.994 5228	+ 35.4	2 29 58.85
14	45	324 41 42.0	41 46.4	151.47	0.31	9.994 6089	36.3	2 26 2.94
15	46	325 42 16.7	42 21.0	151.42	0.25	9.994 6972	37.2	2 22 7.03
16	47	326 42 50.1	42 54.2	151.36	+ 0.16	9.994 7877	+ 38.1	2 18 11.12
17	48	327 43 22.1	43 26.1	151.31	+ 0.06	9.994 8801	38.9	2 14 15.21
18	49	328 43 52.8	43 56.7	151.25	− 0.05	9.994 9744	39.7	2 10 19.30
19	50	329 44 22.2	44 26.0	151.20	− 0.18	9.995 0704	+ 40.4	2 6 23.39
20	51	330 44 50.3	44 53.9	151.14	0.30	9.995 1681	41.0	2 2 27.48
21	52	331 45 17.0	45 20.5	151.09	0.43	9.995 2673	41.6	1 58 31.58
22	53	332 45 42.4	45 45.8	151.03	− 0.53	9.995 3679	+ 42.1	1 54 35.67
23	54	333 46 6.4	46 9.7	150.97	0.63	9.995 4697	42.6	1 50 39.76
24	55	334 46 28.9	46 32.1	150.91	0.69	9.995 5726	43.1	1 46 43.85
25	56	335 46 50.0	46 53.0	150.85	− 0.74	9.995 6764	+ 43.5	1 42 47.94
26	57	336 47 9.6	47 12.5	150.78	0.77	9.995 7811	43.8	1 38 52.03
27	58	337 47 27.6	47 30.4	150.71	0.76	9.995 8865	44.1	1 34 56.13
28	59	338 47 43.9	47 46.6	150.64	− 0.73	9.995 9926	+ 44.3	1 31 0.22
29	60	339 47 58.5	48 1.1	150.57	− 0.67	9.996 0992	+ 44.5	1 27 4.31

NOTE.—The longitudes in the column λ are referred to the true equinox of their own date, while those in the column λ′ are referred to the mean equinox of the beginning of the Besselian fictitious year.

Diff. for 1 Hour, − 9ˢ.8296. (Table II.)

GREENWICH MEAN TIME.

THE MOON'S

Day of the Month.	SEMIDIAMETER. Noon.	SEMIDIAMETER. Midnight.	HORIZONTAL PARALLAX. Noon.	Diff. for 1 Hour.	HORIZONTAL PARALLAX. Midnight.	Diff. for 1 Hour.	UPPER TRANSIT. Meridian of Greenwich.	Diff. for 1 Hour.	AGE. Noon.
	′ ″	′ ″	′ ″	″	′ ″	″	h m	m	d
1	15 33.0	15 36.9	56 58.3	+ 1.21	57 12.7	+ 1.18	2 2.1	1.96	2.1
2	15 40.7	15 44.4	57 26.7	1.15	57 40.3	1.12	2 48.4	1.91	3.1
3	15 48.0	15 51.5	57 53.5	1.09	58 6.3	1.05	3 34.1	1.90	4.1
4	15 54.9	15 58.1	58 18.6	+ 1.00	58 30.4	+ 0.96	4 20.4	1.96	5.1
5	16 1.2	16 4.0	58 41.6	0.91	58 52.2	0.85	5 8.5	2.05	6.1
6	16 6.7	16 9.2	59 2.1	0.79	59 11.2	0.72	5 59.6	2.21	7.1
7	16 11.4	16 13.3	59 19.3	+ 0.62	59 26.1	+ 0.51	6 54.8	2.39	8.1
8	16 14.8	16 15.8	59 31.5	0.38	59 35.2	+ 0.23	7 54.2	2.55	9.1
9	16 16.3	16 16.2	59 37.0	+ 0.06	59 36.7	− 0.12	8 56.7	2.64	10.1
10	16 15.5	16 14.1	59 34.1	− 0.32	59 29.1	− 0.53	10 0.0	2.61	11.1
11	16 12.0	16 9.2	59 21.5	0.74	59 11.3	0.95	11 1.1	2.47	12.1
12	16 5.8	16 1.8	58 58.7	1.15	58 43.8	1.32	11 58.3	2.28	13.1
13	15 57.2	15 52.1	58 26.9	− 1.48	58 8.2	− 1.62	12 50.7	2.09	14.1
14	15 46.6	15 40.8	57 48.1	1.72	57 26.9	1.79	13 38.8	1.93	15.1
15	15 34.9	15 29.0	57 5.2	1.82	56 43.4	1.81	14 23.8	1.82	16.1
16	15 23.1	15 17.4	56 21.8	− 1.77	56 0.9	− 1.70	15 6.7	1.77	17.1
17	15 12.0	15 7.0	55 41.1	1.59	55 22.7	1.46	15 48.7	1.76	18.1
18	15 2.4	14 58.4	55 6.1	1.30	54 51.5	1.13	16 31.0	1.79	19.1
19	14 55.0	14 52.3	54 39.0	− 0.94	54 28.9	− 0.73	17 14.6	1.85	20.1
20	14 50.2	14 48.9	54 21.4	0.52	54 16.5	− 0.30	18 0.2	1.95	21.1
21	14 48.3	14 48.4	54 14.2	− 0.08	54 14.5	+ 0.13	18 48.1	2.04	22.1
22	14 49.2	14 50.7	54 17.4	+ 0.35	54 22.9	+ 0.56	19 38.3	2.14	23.1
23	14 52.8	14 55.6	54 30.8	0.75	54 41.0	0.93	20 30.3	2.19	24.1
24	14 58.9	15 2.8	54 53.3	1.10	55 7.5	1.25	21 23.0	2.19	25.1
25	15 7.1	15 11.8	55 23.3	+ 1.37	55 40.5	+ 1.47	22 15.2	2.15	26.1
26	15 16.8	15 21.9	55 58.7	1.55	56 17.6	1.59	23 6.1	2.09	27.1
27	15 27.1	15 32.4	56 36.8	1.60	56 56.1	1.59	23 55.3	2.01	28.1
28	15 37.6	15 42.5	57 15.0	1.55	57 33.2	1.48	δ	. .	29.1
29	15 47.2	15 51.6	57 50.5	+ 1.39	58 6.5	+ 1.28	0 43.0	1.97	0.5

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 1.			
	h m s	s	° ′ ″	″
0	22 40 32.63	2.0641	S. 13 23 36.2	13.361
1	22 42 36.40	2.0616	13 10 12.4	13.433
2	22 44 40.02	2.0592	12 56 44.3	13.503
3	22 46 43.50	2.0568	12 43 12.1	13.572
4	22 48 46.84	2.0545	12 29 35.7	13.640
5	22 50 50.04	2.0522	12 15 55.3	13.707
6	22 52 53.10	2.0499	12 2 10.9	13.773
7	22 54 56.03	2.0477	11 48 22.6	13.838
8	22 56 58.82	2.0455	11 34 30.4	13.901
9	22 59 1.49	2.0434	11 20 34.5	13.963
10	23 1 4.03	2.0413	11 6 34.9	14.024
11	23 3 6.45	2.0394	10 52 31.6	14.084
12	23 5 8.76	2.0376	10 38 24.8	14.143
13	23 7 10.96	2.0357	10 24 14.5	14.201
14	23 9 13.04	2.0338	10 10 0.7	14.258
15	23 11 15.01	2.0320	9 55 43.5	14.313
16	23 13 16.88	2.0303	9 41 23.1	14.368
17	23 15 18.65	2.0287	9 26 59.4	14.421
18	23 17 20.32	2.0271	9 12 32.6	14.473
19	23 19 21.90	2.0256	8 58 2.7	14.523
20	23 21 23.39	2.0241	8 43 29.8	14.573
21	23 23 24.79	2.0227	8 28 53.9	14.623
22	23 25 26.11	2.0213	8 14 15.1	14.670
23	23 27 27.35	2.0200	S. 7 59 33.5	14.717
	THURSDAY 2.			
0	23 29 28.51	2.0188	S. 7 44 49.1	14.762
1	23 31 29.60	2.0177	7 30 2.1	14.806
2	23 33 30.63	2.0167	7 15 12.4	14.849
3	23 35 31.60	2.0157	7 0 20.2	14.890
4	23 37 32.51	2.0147	6 45 25.6	14.931
5	23 39 33.36	2.0138	6 30 28.5	14.971
6	23 41 34.16	2.0129	6 15 29.1	15.008
7	23 43 34.91	2.0122	6 0 27.5	15.045
8	23 45 35.62	2.0115	5 45 23.7	15.082
9	23 47 36.29	2.0109	5 30 17.7	15.117
10	23 49 36.93	2.0104	5 15 9.7	15.150
11	23 51 37.54	2.0099	4 59 59.7	15.182
12	23 53 38.12	2.0095	4 44 47.8	15.213
13	23 55 38.68	2.0093	4 29 34.1	15.243
14	23 57 39.23	2.0090	4 14 18.6	15.273
15	23 59 39.76	2.0088	3 59 1.4	15.300
16	0 1 40.28	2.0087	3 43 42.6	15.327
17	0 3 40.80	2.0087	3 28 22.2	15.353
18	0 5 41.32	2.0088	3 13 0.3	15.377
19	0 7 41.85	2.0089	2 57 37.0	15.400
20	0 9 42.39	2.0091	2 42 12.3	15.422
21	0 11 42.94	2.0093	2 26 46.4	15.442
22	0 13 43.51	2.0097	2 11 19.3	15.462
23	0 15 44.10	2.0101	1 55 51.0	15.480
24	0 17 44.72	2.0107	S. 1 40 21.7	15.497

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 3.			
	h m s	s	° ′ ″	″
0	0 17 44.72	2.0107	S. 1 40 21.7	15.497
1	0 19 45.38	2.0112	1 24 51.4	15.513
2	0 21 46.07	2.0118	1 9 20.2	15.527
3	0 23 46.80	2.0126	0 53 48.2	15.540
4	0 25 47.58	2.0134	0 38 15.4	15.552
5	0 27 48.41	2.0143	0 22 41.9	15.563
6	0 29 49.30	2.0153	S. 0 7 7.8	15.573
7	0 31 50.25	2.0164	N. 0 8 26.9	15.582
8	0 33 51.27	2.0176	0 24 2.0	15.588
9	0 35 52.36	2.0188	0 39 37.5	15.595
10	0 37 53.52	2.0201	0 55 13.4	15.600
11	0 39 54.77	2.0215	1 10 49.5	15.603
12	0 41 56.10	2.0229	1 26 25.8	15.606
13	0 43 57.52	2.0245	1 42 2.2	15.607
14	0 45 59.04	2.0262	1 57 38.6	15.606
15	0 48 0.66	2.0278	2 13 14.9	15.604
16	0 50 2.38	2.0297	2 28 51.1	15.602
17	0 52 4.22	2.0316	2 44 27.1	15.598
18	0 54 6.17	2.0335	3 0 2.9	15.593
19	0 56 8.24	2.0356	3 15 38.3	15.587
20	0 58 10.44	2.0377	3 31 13.3	15.578
21	1 0 12.76	2.0398	3 46 47.7	15.569
22	1 2 15.22	2.0422	4 2 21.6	15.559
23	1 4 17.82	2.0446	N. 4 17 54.8	15.548
	SATURDAY 4.			
0	1 6 20.57	2.0471	N. 4 33 27.3	15.535
1	1 8 23.47	2.0496	4 48 59.0	15.520
2	1 10 26.52	2.0523	5 4 29.7	15.504
3	1 12 29.74	2.0550	5 19 59.5	15.488
4	1 14 33.12	2.0578	5 35 28.2	15.469
5	1 16 36.67	2.0606	5 50 55.8	15.450
6	1 18 40.39	2.0636	6 6 22.2	15.429
7	1 20 44.30	2.0667	6 21 47.3	15.407
8	1 22 48.39	2.0698	6 37 11.0	15.383
9	1 24 52.67	2.0729	6 52 33.2	15.358
10	1 26 57.14	2.0763	7 7 53.9	15.332
11	1 29 1.82	2.0797	7 23 13.0	15.304
12	1 31 6.70	2.0831	7 38 30.4	15.275
13	1 33 11.79	2.0867	7 53 46.0	15.244
14	1 35 17.10	2.0903	8 8 59.7	15.213
15	1 37 22.63	2.0941	8 24 11.5	15.180
16	1 39 28.39	2.0978	8 39 21.3	15.145
17	1 41 34.37	2.1017	8 54 28.9	15.108
18	1 43 40.59	2.1057	9 9 34.3	15.071
19	1 45 47.05	2.1098	9 24 37.4	15.033
20	1 47 53.76	2.1138	9 39 38.2	14.993
21	1 50 0.71	2.1180	9 54 36.5	14.951
22	1 52 7.92	2.1223	10 9 32.3	14.908
23	1 54 15.39	2.1267	10 24 25.4	14.863
24	1 56 23.12	2.1311	N. 10 39 15.8	14.817

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 5.			
	h m s	s	° ′ ″	″
0	1 56 23.12	2.1311	N.10 39 15.8	14.817
1	1 58 31.12	2.1356	10 54 3.4	14.769
2	2 0 39.39	2.1402	11 8 48.1	14.720
3	2 2 47.94	2.1448	11 23 29.8	14.670
4	2 4 56.77	2.1496	11 38 8.5	14.618
5	2 7 5.89	2.1544	11 52 44.0	14.564
6	2 9 15.30	2.1593	12 7 16.2	14.509
7	2 11 25.01	2.1643	12 21 45.1	14.453
8	2 13 35.02	2.1693	12 36 10.6	14.395
9	2 15 45.33	2.1744	12 50 32.5	14.335
10	2 17 55.95	2.1796	13 4 50.8	14.274
11	2 20 6.88	2.1848	13 19 5.4	14.212
12	2 22 18.13	2.1902	13 33 16.2	14.148
13	2 24 29.70	2.1956	13 47 23.1	14.082
14	2 26 41.60	2.2011	14 1 26.0	14.014
15	2 28 53.83	2.2066	14 15 24.8	13.946
16	2 31 6.39	2.2122	14 29 19.5	13.876
17	2 33 19.29	2.2178	14 43 9.9	13.803
18	2 35 32.53	2.2236	14 56 55.9	13.729
19	2 37 46.12	2.2293	15 10 37.4	13.654
20	2 40 0.05	2.2352	15 24 14.4	13.577
21	2 42 14.34	2.2411	15 37 46.7	13.499
22	2 44 28.98	2.2470	15 51 14.3	13.420
23	2 46 43.98	2.2530	N.16 4 37.1	13.338
	MONDAY 6.			
0	2 48 59.34	2.2591	N.16 17 54.9	13.255
1	2 51 15.07	2.2652	16 31 7.7	13.170
2	2 53 31.16	2.2713	16 44 15.3	13.083
3	2 55 47.63	2.2776	16 57 17.6	12.994
4	2 58 4.47	2.2838	17 10 14.6	12.905
5	3 0 21.69	2.2902	17 23 6.2	12.813
6	3 2 39.29	2.2966	17 35 52.2	12.720
7	3 4 57.28	2.3030	17 48 32.6	12.626
8	3 7 15.65	2.3094	18 1 7.3	12.529
9	3 9 34.41	2.3159	18 13 36.1	12.431
10	3 11 53.56	2.3224	18 25 59.0	12.331
11	3 14 13.10	2.3290	18 38 15.8	12.229
12	3 16 33.04	2.3356	18 50 26.5	12.126
13	3 18 53.37	2.3422	19 2 30.9	12.021
14	3 21 14.10	2.3488	19 14 29.0	11.914
15	3 23 35.22	2.3554	19 26 20.6	11.806
16	3 25 56.75	2.3622	19 38 5.7	11.696
17	3 28 18.68	2.3688	19 49 44.1	11.584
18	3 30 41.01	2.3755	20 1 15.8	11.471
19	3 33 3.74	2.3823	20 12 40.6	11.356
20	3 35 26.88	2.3890	20 23 58.5	11.239
21	3 37 50.42	2.3958	20 35 9.3	11.120
22	3 40 14.37	2.4025	20 46 12.9	11.000
23	3 42 38.72	2.4093	20 57 9.3	10.878
24	3 45 3.48	2.4161	N.21 7 58.3	10.754

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 7.			
	h m s	s	° ′ ″	″
0	3 45 3.48	2.4161	N.21 7 58.3	10.754
1	3 47 28.65	2.4228	21 18 39.8	10.629
2	3 49 54.22	2.4295	21 29 13.8	10.502
3	3 52 20.19	2.4363	21 39 40.1	10.373
4	3 54 46.57	2.4430	21 49 58.6	10.243
5	3 57 13.35	2.4498	22 0 9.2	10.111
6	3 59 40.54	2.4565	22 10 11.9	9.978
7	4 2 8.13	2.4631	22 20 6.5	9.842
8	4 4 36.11	2.4698	22 29 52.9	9.705
9	4 7 4.50	2.4764	22 39 31.1	9.567
10	4 9 33.28	2.4829	22 49 0.9	9.426
11	4 12 2.45	2.4895	22 58 22.2	9.284
12	4 14 32.02	2.4961	23 7 35.0	9.141
13	4 17 1.98	2.5026	23 16 39.1	8.995
14	4 19 32.33	2.5090	23 25 34.4	8.848
15	4 22 3.06	2.5153	23 34 20.9	8.700
16	4 24 34.17	2.5218	23 42 58.4	8.549
17	4 27 5.67	2.5281	23 51 26.8	8.398
18	4 29 37.54	2.5343	23 59 46.1	8.245
19	4 32 9.78	2.5403	24 7 56.2	8.091
20	4 34 42.38	2.5464	24 15 57.0	7.935
21	4 37 15.35	2.5525	24 23 48.4	7.778
22	4 39 48.68	2.5584	24 31 30.3	7.618
23	4 42 22.36	2.5643	N.24 39 2.6	7.458
	WEDNESDAY 8.			
0	4 44 56.39	2.5701	N.24 46 25.2	7.295
1	4 47 30.77	2.5758	24 53 38.0	7.132
2	4 50 5.48	2.5813	25 0 41.0	6.968
3	4 52 40.53	2.5869	25 7 34.1	6.802
4	4 55 15.91	2.5923	25 14 17.2	6.633
5	4 57 51.61	2.5976	25 20 50.1	6.464
6	5 0 27.62	2.6028	25 27 12.9	6.294
7	5 3 3.94	2.6079	25 33 25.4	6.123
8	5 5 40.57	2.6129	25 39 27.7	5.951
9	5 8 17.49	2.6178	25 45 19.5	5.777
10	5 10 54.70	2.6226	25 51 0.9	5.602
11	5 13 32.20	2.6273	25 56 31.7	5.425
12	5 16 9.97	2.6318	26 1 51.9	5.248
13	5 18 48.01	2.6361	26 7 1.4	5.069
14	5 21 26.30	2.6403	26 12 0.2	4.890
15	5 24 4.85	2.6445	26 16 48.2	4.708
16	5 26 43.64	2.6484	26 21 25.2	4.527
17	5 29 22.66	2.6523	26 25 51.4	4.345
18	5 32 1.91	2.6560	26 30 6.6	4.162
19	5 34 41.38	2.6595	26 34 10.8	3.977
20	5 37 21.06	2.6629	26 38 3.8	3.791
21	5 40 0.93	2.6662	26 41 45.7	3.606
22	5 42 40.99	2.6693	26 45 16.5	3.419
23	5 45 21.24	2.6723	26 48 36.0	3.231
24	5 48 1.66	2.6750	N.26 51 44.2	3.043

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 9.			
	h m s	s	° ′ ″	″
0	5 48 1.66	2.6750	N.26 51 44.2	3.043
1	5 50 42.24	2.6776	26 54 41.1	2.853
2	5 53 22.97	2.6801	26 57 26.6	2.664
3	5 56 3.85	2.6824	27 0 0.8	2.474
4	5 58 44.86	2.6844	27 2 23.5	2.283
5	6 1 25.98	2.6863	27 4 34.7	2.091
6	6 4 7.22	2.6882	27 6 34.4	1.899
7	6 6 48.56	2.6898	27 8 22.6	1.708
8	6 9 29.99	2.6913	27 9 59.3	1.515
9	6 12 11.51	2.6925	27 11 24.4	1.322
10	6 14 53.09	2.6935	27 12 37.9	1.128
11	6 17 34.73	2.6944	27 13 39.8	0.935
12	6 20 16.42	2.6952	27 14 30.1	0.742
13	6 22 58.15	2.6957	27 15 8.8	0.548
14	6 25 39.90	2.6960	27 15 35.8	0.353
15	6 28 21.67	2.6962	27 15 51.2	+0.159
16	6 31 3.44	2.6962	27 15 54.9	−0.035
17	6 33 45.21	2.6960	27 15 47.0	0.229
18	6 36 26.96	2.6956	27 15 27.4	0.423
19	6 39 8.68	2.6950	27 14 56.2	0.617
20	6 41 50.36	2.6943	27 14 13.4	0.810
21	6 44 32.00	2.6935	27 13 19.0	1.004
22	6 47 13.58	2.6923	27 12 12.9	1.198
23	6 49 55.08	2.6910	N.27 10 55.3	1.390
	FRIDAY 10.			
0	6 52 36.50	2.6896	N.27 9 26.1	1.583
1	6 55 17.83	2.6879	27 7 45.4	1.775
2	6 57 59.05	2.6861	27 5 53.1	1.968
3	7 0 40.16	2.6841	27 3 49.3	2.159
4	7 3 21.14	2.6819	27 1 34.0	2.350
5	7 6 1.99	2.6796	26 59 7.3	2.540
6	7 8 42.69	2.6771	26 56 29.2	2.729
7	7 11 23.24	2.6744	26 53 39.8	2.918
8	7 14 3.62	2.6716	26 50 39.0	3.107
9	7 16 43.83	2.6686	26 47 27.0	3.294
10	7 19 23.85	2.6653	26 44 3.7	3.482
11	7 22 3.67	2.6620	26 40 29.2	3.668
12	7 24 43 29	2.6585	26 36 43.6	3.853
13	7 27 22.69	2.6548	26 32 46.9	4.037
14	7 30 1.87	2.6510	26 28 39.2	4.220
15	7 32 40.81	2.6469	26 24 20.5	4.403
16	7 35 19.51	2.6428	26 19 50.9	4.584
17	7 37 57.95	2.6385	26 15 10.4	4.765
18	7 40 36.13	2.6341	26 10 19.1	4.944
19	7 43 14.04	2.6296	26 5 17.1	5.122
20	7 45 51.68	2.6249	26 0 4.4	5.299
21	7 48 29.03	2.6201	25 54 41.2	5.475
22	7 51 6.09	2.6152	25 49 7.5	5.649
23	7 53 42.85	2.6100	25 43 23.3	5.823
24	7 56 19.29	2.6048	N.25 37 28.7	5.995

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 11.			
	h m s	s	° ′ ″	″
0	7 56 19.29	2.6048	N.25 37 28.7	5.995
1	7 58 55.42	2.5994	25 31 23.9	6.166
2	8 1 31.22	2.5939	25 25 8.8	6.336
3	8 4 6.69	2.5883	25 18 43.6	6.503
4	8 6 41.82	2.5826	25 12 8.4	6.670
5	8 9 16.60	2.5768	25 5 23.2	6.835
6	8 11 51.03	2.5709	24 58 28.2	6.998
7	8 14 25.11	2.5650	24 51 23.4	7.161
8	8 16 58.83	2.5588	24 44 8.9	7.323
9	8 19 32.17	2.5526	24 36 44.8	7.482
10	8 22 5.14	2.5463	24 29 11.1	7.639
11	8 24 37.73	2.5399	24 21 28.0	7.796
12	8 27 9.93	2.5334	24 13 35.6	7.950
13	8 29 41.74	2.5269	24 5 34.0	8.103
14	8 32 13.16	2.5203	23 57 23.3	8.254
15	8 34 44.17	2.5135	23 49 3.5	8.404
16	8 37 14.78	2.5068	23 40 34.8	8.552
17	8 39 44.98	2.4999	23 31 57.3	8.698
18	8 42 14.77	2.4930	23 23 11.1	8.843
19	8 44 44.14	2.4861	23 14 16.2	8.986
20	8 47 13.10	2.4791	23 5 12.8	9.127
21	8 49 41.63	2.4720	22 56 1.0	9.266
22	8 52 9.74	2.4649	22 46 40.9	9.404
23	8 54 37.42	2.4578	N.22 37 12.5	9.540
	SUNDAY 12.			
0	8 57 4.67	2.4505	N.22 27 36.1	9.673
1	8 59 31.48	2.4433	22 17 51.7	9.806
2	9 1 57.86	2.4360	22 7 59.4	9.937
3	9 4 23.80	2.4288	21 57 59.3	10.066
4	9 6 49.31	2.4214	21 47 51.5	10.193
5	9 9 14.37	2.4140	21 37 36.2	10.318
6	9 11 38.99	2.4067	21 27 13.4	10.441
7	9 14 3.17	2.3993	21 16 43.3	10.563
8	9 16 26.90	2.3918	21 6 5.9	10.683
9	9 18 50.19	2.3844	20 55 21.4	10.800
10	9 21 13.03	2.3769	20 44 29.9	10.916
11	9 23 35.42	2.3695	20 33 31.5	11.030
12	9 25 57.37	2.3621	20 22 26.3	11.143
13	9 28 18.87	2.3547	20 11 14.4	11.253
14	9 30 39.93	2.3473	19 59 56.0	11.361
15	9 33 0.54	2.3398	19 48 31.1	11.468
16	9 35 20.70	2.3323	19 36 59.8	11.573
17	9 37 40.42	2.3249	19 25 22.3	11.676
18	9 39 59.69	2.3175	19 13 38.7	11.778
19	9 42 18.52	2.3102	19 1 49.1	11.877
20	9 44 36.91	2.3028	18 49 53.5	11.974
21	9 46 54.85	2.2953	18 37 52.1	12.071
22	9 49 12.35	2.2880	18 25 45.0	12.165
23	9 51 29.41	2.2808	18 13 32.3	12.257
24	9 53 46.04	2.2735	N.18 1 14.2	12.347

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 13.			
	h m s	s	° ′ ″	″
0	9 53 46.04	2.2735	N. 18 1 14.2	12.347
1	9 56 2.23	2.2663	17 48 50.7	12.435
2	9 58 17.99	2.2590	17 36 22.0	12.522
3	10 0 33.31	2.2518	17 23 48.1	12.607
4	10 2 48.20	2.2447	17 11 9.2	12.690
5	10 5 2.67	2.2376	16 58 25.3	12.772
6	10 7 16.71	2.2305	16 45 36.6	12.851
7	10 9 30.33	2.2235	16 32 43.2	12.929
8	10 11 43.53	2.2165	16 19 45.1	13.005
9	10 13 56.31	2.2095	16 6 42.6	13.078
10	10 16 8.67	2.2026	15 53 35.7	13.152
11	10 18 20.62	2.1958	15 40 24.4	13.223
12	10 20 32.17	2.1891	15 27 8.9	13.293
13	10 22 43.31	2.1823	15 13 49.3	13.359
14	10 24 54.04	2.1755	15 0 25.8	13.425
15	10 27 4.37	2.1689	14 46 58.3	13.490
16	10 29 14.31	2.1624	14 33 27.0	13.552
17	10 31 23.86	2.1558	14 19 52.1	13.612
18	10 33 33.01	2.1493	14 6 13.6	13.672
19	10 35 41.78	2.1429	13 52 31.5	13.729
20	10 37 50.16	2.1365	13 38 46.1	13.785
21	10 39 58.16	2.1303	13 24 57.4	13.839
22	10 42 5.79	2.1240	13 11 5.4	13.892
23	10 44 13.04	2.1178	N. 12 57 10.3	13.943
	TUESDAY 14.			
0	10 46 19.93	2.1118	N. 12 43 12.2	13.993
1	10 48 26.46	2.1058	12 29 11.2	14.040
2	10 50 32.62	2.0998	12 15 7.4	14.087
3	10 52 38.43	2.0938	12 1 0.8	14.132
4	10 54 43.88	2.0880	11 46 51.6	14.175
5	10 56 48.99	2.0823	11 32 39.8	14.217
6	10 58 53.75	2.0765	11 18 25.6	14.257
7	11 0 58.17	2.0709	11 4 9.0	14.295
8	11 3 2.26	2.0654	10 49 50.2	14.333
9	11 5 6.02	2.0599	10 35 29.1	14.369
10	11 7 9.45	2.0544	10 21 5.9	14.403
11	11 9 12.55	2.0491	10 6 40.7	14.436
12	11 11 15.34	2.0439	9 52 13.6	14.468
13	11 13 17.82	2.0387	9 37 44.6	14.498
14	11 15 19.98	2.0335	9 23 13.9	14.526
15	11 17 21.84	2.0285	9 8 41.5	14.553
16	11 19 23.40	2.0235	8 54 7.5	14.580
17	11 21 24.66	2.0186	8 39 31.9	14.605
18	11 23 25.63	2.0138	8 24 54.9	14.628
19	11 25 26.32	2.0091	8 10 16.6	14.649
20	11 27 26.72	2.0044	7 55 37.0	14.670
21	11 29 26.84	1.9998	7 40 56.2	14.689
22	11 31 26.69	1.9953	7 26 14.3	14.707
23	11 33 26.27	1.9908	7 11 31.4	14.723
24	11 35 25.58	1.9864	N. 6 56 47.5	14.739

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 15.			
	h m s	s	° ′ ″	″
0	11 35 25.58	1.9864	N. 6 56 47.5	14.739
1	11 37 24.64	1.9822	6 42 2.7	14.753
2	11 39 23.44	1.9779	6 27 17.1	14.766
3	11 41 21.99	1.9738	6 12 30.8	14.778
4	11 43 20.29	1.9697	5 57 43.8	14.788
5	11 45 18.35	1.9658	5 42 56.2	14.798
6	11 47 16.18	1.9618	5 28 8.1	14.806
7	11 49 13.77	1.9580	5 13 19.5	14.813
8	11 51 11.14	1.9542	4 58 30.6	14.818
9	11 53 8.28	1.9506	4 43 41.4	14.823
10	11 55 5.21	1.9470	4 28 51.9	14.826
11	11 57 1.92	1.9435	4 14 2.3	14.828
12	11 58 58.43	1.9401	3 59 12.5	14.830
13	12 0 54.73	1.9368	3 44 22.7	14.829
14	12 2 50.84	1.9335	3 29 33.0	14.828
15	12 4 46.75	1.9303	3 14 43.4	14.825
16	12 6 42.47	1.9272	2 59 54.0	14.822
17	12 8 38.01	1.9242	2 45 4.8	14.818
18	12 10 33.37	1.9212	2 30 15.9	14.813
19	12 12 28.55	1.9183	2 15 27.3	14.806
20	12 14 23.56	1.9154	2 0 39.2	14.798
21	12 16 18.40	1.9127	1 45 51.5	14.790
22	12 18 13.08	1.9101	1 31 4.4	14.780
23	12 20 7.61	1.9075	N. 1 16 17.9	14.770
	THURSDAY 16.			
0	12 22 1.98	1.9050	N. 1 1 32.0	14.758
1	12 23 56.21	1.9026	0 46 46.9	14.745
2	12 25 50.29	1.9003	0 32 2.6	14.732
3	12 27 44.24	1.8980	0 17 19.1	14.718
4	12 29 38.05	1.8958	N. 0 2 36.5	14.702
5	12 31 31.73	1.8937	S. 0 12 5.1	14.685
6	12 33 25.29	1.8917	0 26 45.7	14.668
7	12 35 18.73	1.8897	0 41 25.3	14.650
8	12 37 12.05	1.8878	0 56 3.7	14.630
9	12 39 5.26	1.8859	1 10 40.9	14.610
10	12 40 58.36	1.8842	1 25 16.9	14.589
11	12 42 51.36	1.8826	1 39 51.6	14.567
12	12 44 44.27	1.8810	1 54 24.9	14.543
13	12 46 37.08	1.8795	2 8 56.8	14.520
14	12 48 29.81	1.8781	2 23 27.3	14.496
15	12 50 22.45	1.8768	2 37 56.3	14.470
16	12 52 15.02	1.8755	2 52 23.7	14.443
17	12 54 7.51	1.8743	3 6 49.5	14.417
18	12 55 59.93	1.8731	3 21 13.7	14.388
19	12 57 52.28	1.8720	3 35 36.1	14.359
20	12 59 44.57	1.8711	3 49 56.8	14.329
21	13 1 36.81	1.8702	4 4 15.6	14.298
22	13 3 28.99	1.8693	4 18 32.6	14.267
23	13 5 21.12	1.8685	4 32 47.7	14.235
24	13 7 13.21	1.8678	S. 4 47 0.8	14.202

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 17.			
	h m s	s	° ′ ″	″
0	13 7 13.21	1.8678	S. 4 47 0.8	14.202
1	13 9 5.26	1.8672	5 1 11.9	14.168
2	13 10 57.27	1.8666	5 15 20.9	14.133
3	13 12 49.25	1.8662	5 29 27.9	14.098
4	13 14 41.21	1.8658	5 43 32.7	14.062
5	13 16 33.14	1.8654	5 57 35.3	14.024
6	13 18 25.06	1.8652	6 11 35.6	13.987
7	13 20 16.96	1.8649	6 25 33.7	13.948
8	13 22 8.85	1.8648	6 39 29.4	13.909
9	13 24 0.74	1.8648	6 53 22.8	13.869
10	13 25 52.62	1.8648	7 7 13.7	13.828
11	13 27 44.51	1.8648	7 21 2.2	13.787
12	13 29 36.40	1.8650	7 34 48.1	13.744
13	13 31 28.31	1.8653	7 48 31.5	13.701
14	13 33 20.23	1.8655	8 2 12.2	13.657
15	13 35 12.17	1.8658	8 15 50.3	13.613
16	13 37 4.13	1.8663	8 29 25.7	13.569
17	13 38 56.12	1.8668	8 42 58.4	13.522
18	13 40 48.14	1.8673	8 56 28.3	13.474
19	13 42 40.19	1.8678	9 9 55.3	13.427
20	13 44 32.28	1.8686	9 23 19.5	13.378
21	13 46 24.42	1.8693	9 36 40.7	13.329
22	13 48 16.60	1.8701	9 49 59.0	13.280
23	13 50 8.83	1.8710	S. 10 3 14.3	13.229
	SATURDAY 18.			
0	13 52 1.12	1.8720	S. 10 16 26.5	13.178
1	13 53 53.47	1.8730	10 29 35.6	13.126
2	13 55 45.88	1.8740	10 42 41.6	13.074
3	13 57 38.35	1.8752	10 55 44.5	13.021
4	13 59 30.90	1.8764	11 8 44.1	12.967
5	14 1 23.52	1.8776	11 21 40.5	12.913
6	14 3 16.21	1.8789	11 34 33.6	12.857
7	14 5 8.99	1.8803	11 47 23.3	12.801
8	14 7 1.85	1.8818	12 0 9.7	12.744
9	14 8 54.80	1.8833	12 12 52.6	12.687
10	14 10 47.84	1.8848	12 25 32.1	12.629
11	14 12 40.98	1.8864	12 38 8.1	12.570
12	14 14 34.21	1.8881	12 50 40.5	12.510
13	14 16 27.55	1.8898	13 3 9.3	12.450
14	14 18 20.99	1.8916	13 15 34.5	12.389
15	14 20 14.54	1.8935	13 27 56.0	12.328
16	14 22 8.21	1.8954	13 40 13.8	12.265
17	14 24 1.99	1.8973	13 52 27.8	12.203
18	14 25 55.89	1.8993	14 4 38.1	12.139
19	14 27 49.91	1.9014	14 16 44.5	12.074
20	14 29 44.06	1.9036	14 28 47.0	12.010
21	14 31 38.34	1.9058	14 40 45.7	11.945
22	14 33 32.75	1.9080	14 52 40.4	11.878
23	14 35 27.30	1.9103	15 4 31.1	11.811
24	14 37 21.99	1.9127	S. 15 16 17.7	11.743

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 19.			
	h m s	s	° ′ ″	″
0	14 37 21.99	1.9127	S. 15 16 17.7	11.743
1	14 39 16.82	1.9150	15 28 0.2	11.674
2	14 41 11.79	1.9174	15 39 38.6	11.606
3	14 43 6.91	1.9199	15 51 12.9	11.536
4	14 45 2.18	1.9225	16 2 42.9	11.465
5	14 46 57.61	1.9251	16 14 8.7	11.394
6	14 48 53.19	1.9277	16 25 30.2	11.323
7	14 50 48.93	1.9304	16 36 47.4	11.250
8	14 52 44.84	1.9332	16 48 0.2	11.177
9	14 54 40.91	1.9359	16 59 8.6	11.103
10	14 56 37.15	1.9388	17 10 12.5	11.028
11	14 58 33.56	1.9416	17 21 11.9	10.953
12	15 0 30.14	1.9445	17 32 6.8	10.877
13	15 2 26.90	1.9475	17 42 57.1	10.800
14	15 4 23.84	1.9505	17 53 42.8	10.723
15	15 6 20.96	1.9535	18 4 23.8	10.645
16	15 8 18.26	1.9566	18 15 0.2	10.567
17	15 10 15.75	1.9597	18 25 31.8	10.487
18	15 12 13.42	1.9628	18 35 58.6	10.407
19	15 14 11.29	1.9661	18 46 20.6	10.326
20	15 16 9.35	1.9693	18 56 37.7	10.244
21	15 18 7.61	1.9727	19 6 49.9	10.162
22	15 20 6.07	1.9759	19 16 57.1	10.078
23	15 22 4.72	1.9792	S. 19 26 59.3	9.995
	MONDAY 20.			
0	15 24 3.57	1.9826	S. 19 36 56.5	9.911
1	15 26 2.63	1.9860	19 46 48.6	9.826
2	15 28 1.89	1.9894	19 56 35.6	9.740
3	15 30 1.36	1.9929	20 6 17.4	9.653
4	15 32 1.04	1.9964	20 15 54.0	9.566
5	15 34 0.93	1.9999	20 25 25.3	9.478
6	15 36 1.03	2.0035	20 34 51.4	9.390
7	15 38 1.35	2.0072	20 44 12.1	9.301
8	15 40 1.89	2.0108	20 53 27.5	9.211
9	15 42 2.64	2.0143	21 2 37.4	9.120
10	15 44 3.61	2.0180	21 11 41.9	9.029
11	15 46 4.80	2.0217	21 20 40.9	8.937
12	15 48 6.21	2.0254	21 29 34.3	8.843
13	15 50 7.85	2.0292	21 38 22.1	8.750
14	15 52 9.71	2.0328	21 47 4.3	8.656
15	15 54 11.79	2.0366	21 55 40.8	8.561
16	15 56 14.10	2.0404	22 4 11.6	8.465
17	15 58 16.64	2.0443	22 12 36.6	8.368
18	16 0 19.41	2.0480	22 20 55.8	8.272
19	16 2 22.40	2.0518	22 29 9.2	8.174
20	16 4 25.62	2.0557	22 37 16.7	8.075
21	16 6 29.08	2.0596	22 45 18.2	7.976
22	16 8 32.77	2.0633	22 53 13.8	7.876
23	16 10 36.68	2.0672	23 1 3.3	7.775
24	16 12 40.83	2.0711	S. 23 8 46.8	7.673

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 21.			
	h m s	s	° ′ ″	″
0	16 12 40.83	2.0711	S.23 8 46.8	7.673
1	16 14 45.21	2.0750	23 16 24.1	7.571
2	16 16 49.83	2.0789	23 23 55.3	7.468
3	16 18 54.68	2.0828	23 31 20.3	7.365
4	16 20 59.76	2.0866	23 38 39.1	7.261
5	16 23 5.07	2.0905	23 45 51.6	7.156
6	16 25 10.62	2.0944	23 52 57.8	7.050
7	16 27 16.40	2.0983	23 59 57.6	6.943
8	16 29 22.41	2.1021	24 6 51.0	6.837
9	16 31 28.65	2.1060	24 13 38.0	6.728
10	16 33 35.13	2.1099	24 20 18.4	6.619
11	16 35 41.84	2.1138	24 26 52.3	6.511
12	16 37 48.78	2.1176	24 33 19.7	6.401
13	16 39 55.95	2.1214	24 39 40.4	6.290
14	16 42 3.35	2.1253	24 45 54.5	6.179
15	16 44 10.98	2.1291	24 52 1.9	6.067
16	16 46 18.84	2.1328	24 58 2.5	5.954
17	16 48 26.92	2.1366	25 3 56.4	5.841
18	16 50 35.23	2.1404	25 9 43.4	5.727
19	16 52 43.77	2.1442	25 15 23.6	5.613
20	16 54 52.53	2.1478	25 20 56.9	5.497
21	16 57 1.51	2.1515	25 26 23.2	5.380
22	16 59 10.71	2.1553	25 31 42.5	5.263
23	17 1 20.14	2.1589	S.25 36 54.8	5.146
	WEDNESDAY 22.			
0	17 3 29.78	2.1625	S.25 42 0.0	5.028
1	17 5 39.64	2.1661	25 46 58.1	4.909
2	17 7 49.71	2.1697	25 51 49.1	4.790
3	17 10 0.00	2.1733	25 56 32.9	4.670
4	17 12 10.50	2.1767	26 1 9.5	4.550
5	17 14 21.20	2.1802	26 5 38.9	4.428
6	17 16 32.12	2.1837	26 10 0.9	4.306
7	17 18 43.24	2.1870	26 14 15.6	4.184
8	17 20 54.56	2.1903	26 18 23.0	4.061
9	17 23 6.08	2.1937	26 22 22.9	3.937
10	17 25 17.80	2.1969	26 26 15.4	3.813
11	17 27 29.71	2.2002	26 30 0.4	3.688
12	17 29 41.82	2.2034	26 33 37.9	3.562
13	17 31 54.12	2.2065	26 37 7.8	3.436
14	17 34 6.60	2.2096	26 40 30.2	3.310
15	17 36 19.27	2.2127	26 43 45.0	3.183
16	17 38 32.12	2.2157	26 46 52.1	3.054
17	17 40 45.15	2.2187	26 49 51.5	2.926
18	17 42 58.36	2.2216	26 52 43.2	2.798
19	17 45 11.74	2.2244	26 55 27.2	2.668
20	17 47 25.29	2.2272	26 58 3.4	2.538
21	17 49 39.00	2.2299	27 0 31.8	2.408
22	17 51 52.88	2.2327	27 2 52.3	2.276
23	17 54 6.92	2.2353	27 5 4.9	2.145
24	17 56 21.11	2.2378	S.27 7 9.7	2.013

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 23.			
	h m s	s	° ′ ″	″
0	17 56 21.11	2.2378	S.27 7 9.7	2.013
1	17 58 35.45	2.2403	27 9 6.5	1.881
2	18 0 49.95	2.2428	27 10 55.4	1.748
3	18 3 4.59	2.2452	27 12 36.3	1.615
4	18 5 19.37	2.2474	27 14 9.2	1.482
5	18 7 34.28	2.2497	27 15 34.1	1.348
6	18 9 49.33	2.2519	27 16 50.9	1.213
7	18 12 4.51	2.2540	27 17 59.6	1.078
8	18 14 19.81	2.2561	27 19 0.2	0.943
9	18 16 35.24	2.2581	27 19 52.7	0.807
10	18 18 50.78	2.2600	27 20 37.0	0.670
11	18 21 6.44	2.2619	27 21 13.1	0.534
12	18 23 22.21	2.2637	27 21 41.1	0.398
13	18 25 38.08	2.2654	27 22 0.9	0.261
14	18 27 54.06	2.2671	27 22 12.4	−0.123
15	18 30 10.13	2.2686	27 22 15.7	+0.014
16	18 32 26.29	2.2701	27 22 10.7	0.153
17	18 34 42.54	2.2715	27 21 57.4	0.290
18	18 36 58.87	2.2728	27 21 35.9	0.428
19	18 39 15.28	2.2741	27 21 6.0	0.568
20	18 41 31.76	2.2753	27 20 27.8	0.707
21	18 43 48.32	2.2765	27 19 41.2	0.846
22	18 46 4.94	2.2775	27 18 46.3	0.985
23	18 48 21.62	2.2785	S.27 17 43.0	1.124
	FRIDAY 24.			
0	18 50 38.36	2.2794	S.27 16 31.4	1.263
1	18 52 55.15	2.2802	27 15 11.4	1.403
2	18 55 11.99	2.2809	27 13 43.0	1.543
3	18 57 28.86	2.2816	27 12 6.2	1.683
4	18 59 45.78	2.2823	27 10 21.0	1.824
5	19 2 2.73	2.2828	27 8 27.3	1.965
6	19 4 19.71	2.2832	27 6 25.2	2.104
7	19 6 36.71	2.2835	27 4 14.8	2.244
8	19 8 53.73	2.2838	27 1 55.9	2.385
9	19 11 10.77	2.2841	26 59 28.6	2.526
10	19 13 27.82	2.2842	26 56 52.8	2.667
11	19 15 44.87	2.2843	26 54 8.6	2.807
12	19 18 1.93	2.2843	26 51 16.0	2.947
13	19 20 18.98	2.2842	26 48 15.0	3.088
14	19 22 36.03	2.2840	26 45 5.5	3.228
15	19 24 53.06	2.2838	26 41 47.7	3.368
16	19 27 10.08	2.2835	26 38 21.4	3.508
17	19 29 27.08	2.2831	26 34 46.7	3.648
18	19 31 44.05	2.2826	26 31 3.6	3.788
19	19 34 0.99	2.2820	26 27 12.1	3.928
20	19 36 17.89	2.2814	26 23 12.2	4.068
21	19 38 34.76	2.2808	26 19 3.9	4.208
22	19 40 51.58	2.2800	26 14 47.3	4.347
23	19 43 8.36	2.2792	26 10 22.3	4.486
24	19 45 25.09	2.2783	S.26 5 49.0	4.624

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 25.			
	h m s	s	° ′ ″	″
0	19 45 25.09	2.2783	S. 26 5 49.0	4.624
1	19 47 41.76	2.2773	26 1 7.4	4.763
2	19 49 58.37	2.2763	25 56 17.4	4.902
3	19 52 14.92	2.2753	25 51 19.2	5.039
4	19 54 31.40	2.2741	25 46 12.7	5.178
5	19 56 47.81	2.2729	25 40 57.9	5.315
6	19 59 4.15	2.2717	25 35 34.9	5.452
7	20 1 20.41	2.2703	25 30 3.7	5.589
8	20 3 36.58	2.2688	25 24 24.2	5.726
9	20 5 52.67	2.2674	25 18 36.6	5.862
10	20 8 8.67	2.2659	25 12 40.8	5.998
11	20 10 24.58	2.2643	25 6 36.8	6.133
12	20 12 40.39	2.2627	25 0 24.8	6.268
13	20 14 56.10	2.2610	24 54 4.7	6.403
14	20 17 11.71	2.2593	24 47 36.5	6.537
15	20 19 27.21	2.2574	24 41 0.3	6.671
16	20 21 42.60	2.2556	24 34 16.0	6.804
17	20 23 57.88	2.2537	24 27 23.8	6.936
18	20 26 13.04	2.2517	24 20 23.7	7.068
19	20 28 28.08	2.2497	24 13 15.6	7.201
20	20 30 43.00	2.2477	24 5 59.6	7.332
21	20 32 57.80	2.2456	23 58 35.8	7.462
22	20 35 12.47	2.2435	23 51 4.2	7.592
23	20 37 27.02	2.2413	S. 23 43 24.8	7.721
	SUNDAY 26.			
0	20 39 41.43	2.2390	S. 23 35 37.7	7.850
1	20 41 55.70	2.2368	23 27 42.8	7.978
2	20 44 9.84	2.2345	23 19 40.3	8.106
3	20 46 23.84	2.2322	23 11 30.1	8.233
4	20 48 37.70	2.2298	23 3 12.3	8.359
5	20 50 51.42	2.2274	22 54 47.0	8.485
6	20 53 4.99	2.2249	22 46 14.1	8.610
7	20 55 18.41	2.2225	22 37 33.8	8.734
8	20 57 31.69	2.2201	22 28 46.0	8.858
9	20 59 44.82	2.2175	22 19 50.8	8.981
10	21 1 57.79	2.2149	22 10 48.3	9.103
11	21 4 10.61	2.2124	22 1 38.5	9.224
12	21 6 23.28	2.2098	21 52 21.4	9.345
13	21 8 35.79	2.2072	21 42 57.1	9.465
14	21 10 48.14	2.2046	21 33 25.6	9.584
15	21 13 0.34	2.2019	21 23 47.0	9.703
16	21 15 12.37	2.1992	21 14 1.3	9.820
17	21 17 24.24	2.1965	21 4 8.6	9.937
18	21 19 35.95	2.1938	20 54 8.9	10.053
19	21 21 47.50	2.1912	20 44 2.2	10.168
20	21 23 58.89	2.1884	20 33 48.7	10.282
21	21 26 10.11	2.1857	20 23 28.4	10.395
22	21 28 21.17	2.1830	20 13 1.3	10.508
23	21 30 32.07	2.1803	20 2 27.5	10.619
24	21 32 42.80	2.1775	S. 19 51 47.0	10.730

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 27.			
	h m s	s	° ′ ″	″
0	21 32 42.80	2.1775	S. 19 51 47.0	10.730
1	21 34 53.37	2.1748	19 40 59.9	10.840
2	21 37 3.77	2.1719	19 30 6.2	10.948
3	21 39 14.00	2.1692	19 19 6.1	11.056
4	21 41 24.07	2.1665	19 7 59.5	11.163
5	21 43 33.98	2.1638	18 56 46.5	11.270
6	21 45 43.72	2.1610	18 45 27.1	11.375
7	21 47 53.30	2.1583	18 34 1.5	11.479
8	21 50 2.71	2.1555	18 22 29.6	11.583
9	21 52 11.96	2.1528	18 10 51.6	11.684
10	21 54 21.05	2.1501	17 59 7.5	11.786
11	21 56 29.97	2.1473	17 47 17.3	11.887
12	21 58 38.73	2.1447	17 35 21.1	11.985
13	22 0 47.33	2.1420	17 23 19.1	12.083
14	22 2 55.77	2.1394	17 11 11.2	12.181
15	22 5 4.06	2.1368	16 58 57.4	12.278
16	22 7 12.19	2.1342	16 46 37.9	12.372
17	22 9 20.16	2.1316	16 34 12.8	12.466
18	22 11 27.98	2.1290	16 21 42.0	12.559
19	22 13 35.64	2.1264	16 9 5.7	12.651
20	22 15 43.15	2.1239	15 56 23.9	12.742
21	22 17 50.51	2.1214	15 43 36.7	12.832
22	22 19 57.72	2.1189	15 30 44.1	12.921
23	22 22 4.78	2.1165	S. 15 17 46.2	13.008
	TUESDAY 28.			
0	22 24 11.70	2.1141	S. 15 4 43.1	13.094
1	22 26 18.47	2.1118	14 51 34.9	13.179
2	22 28 25.11	2.1094	14 38 21.6	13.264
3	22 30 31.60	2.1070	14 25 3.2	13.348
4	22 32 37.95	2.1048	14 11 39.9	13.429
5	22 34 44.17	2.1025	13 58 11.7	13.510
6	22 36 50.25	2.1003	13 44 38.7	13.590
7	22 38 56.20	2.0981	13 31 0.9	13.668
8	22 41 2.02	2.0960	13 17 18.5	13.746
9	22 43 7.72	2.0939	13 3 31.4	13.823
10	22 45 13.29	2.0918	12 49 39.8	13.897
11	22 47 18.74	2.0898	12 35 43.8	13.971
12	22 49 24.06	2.0878	12 21 43.3	14.044
13	22 51 29.27	2.0859	12 7 38.5	14.115
14	22 53 34.37	2.0840	11 53 29.5	14.185
15	22 55 39.35	2.0821	11 39 16.3	14.255
16	22 57 44.22	2.0803	11 24 58.9	14.323
17	22 59 48.99	2.0786	11 10 37.5	14.389
18	23 1 53.65	2.0768	10 56 12.2	14.454
19	23 3 58.21	2.0753	10 41 43.0	14.519
20	23 6 2.68	2.0737	10 27 9.9	14.583
21	23 8 7.05	2.0721	10 12 33.1	14.643
22	23 10 11.33	2.0706	9 57 52.7	14.704
23	23 12 15.52	2.0691	9 43 8.6	14.764
24	23 14 19.62	2.0677	S. 9 28 21.0	14.822

GREENWICH MEAN TIME.

PHASES OF THE MOON.

		d	h	m
☽ First Quarter	Feb.	6	3	27.6
○ Full Moon		12	22	37.5
☾ Last Quarter		20	15	44.2
● New Moon		28	12	31.1

		d	h
☾ Perigee	Feb.	9	4.9
☾ Apogee		21	4.5

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	SUN	W.	25 29 53	3033	26 59 25	3016	28 29 18	3000	29 59 30	2985
	SATURN	E.	53 50 32	2618	52 12 2	2610	50 33 20	2602	48 54 27	2594
	Aldebaran	E.	91 27 44	2635	89 49 37	2628	88 11 20	2620	86 32 52	2612
2	SUN	W.	37 34 54	2922	39 6 45	2911	40 38 50	2901	42 11 8	2891
	SATURN	E.	40 37 24	2556	38 57 28	2548	37 17 21	2541	35 37 4	2534
	Aldebaran	E.	78 17 51	2574	76 38 20	2567	74 58 40	2560	73 18 51	2553
	Pollux	E.	122 17 6	2539	120 36 47	2531	118 56 17	2523	117 15 36	2516
3	SUN	W.	49 55 49	2843	51 29 21	2835	53 3 4	2826	54 36 58	2818
	SATURN	E.	27 13 16	2500	25 32 2	2494	23 50 40	2487	22 9 9	2481
	Aldebaran	E.	64 57 28	2522	63 16 46	2517	61 35 57	2512	59 55 1	2507
	Pollux	E.	108 49 38	2480	107 7 56	2472	105 26 4	2465	103 44 2	2459
4	SUN	W.	62 29 10	2777	64 4 8	2770	65 39 15	2763	67 14 32	2755
	Aldebaran	E.	51 28 37	2485	49 47 3	2482	48 5 24	2480	46 23 42	2477
	Pollux	E.	95 11 29	2424	93 28 29	2418	91 45 21	2412	90 2 3	2405
5	SUN	W.	75 13 25	2719	76 49 40	2712	78 26 4	2705	80 2 37	2698
	Aldebaran	E.	37 54 38	2476	36 12 51	2479	34 31 8	2483	32 49 31	2489
	Pollux	E.	81 23 15	2374	79 39 2	2368	77 54 41	2362	76 10 11	2355
	Regulus	E.	117 47 42	2387	116 3 49	2380	114 19 46	2374	112 35 34	2367
6	SUN	W.	88 7 37	2666	89 45 3	2660	91 22 37	2654	93 0 19	2648
	SATURN	W.	14 6 0	2355	15 50 39	2348	17 35 28	2341	19 20 28	2334
	Pollux	E.	67 25 30	2326	65 40 9	2320	63 54 39	2315	62 9 1	2309
	Regulus	E.	103 52 15	2337	102 7 9	2331	100 21 54	2325	98 36 31	2320
7	SUN	W.	101 10 46	2620	102 49 14	2615	104 27 48	2610	106 6 29	2606
	SATURN	W.	28 7 53	2304	29 53 47	2299	31 39 48	2294	33 25 57	2289
	Pollux	E.	53 18 58	2285	51 32 36	2280	49 46 7	2275	47 59 31	2271
	Regulus	E.	89 47 36	2293	88 1 26	2288	86 15 9	2284	84 28 46	2279
8	SUN	W.	114 21 20	2587	116 0 33	2584	117 39 51	2581	119 19 12	2579
	SATURN	W.	42 18 20	2268	44 5 7	2265	45 51 58	2262	47 38 54	2259
	α Arietis	W.	37 6 44	2450	38 49 7	2431	40 31 57	2415	42 15 10	2401
	Pollux	E.	39 5 5	2254	37 17 57	2251	35 30 45	2249	33 43 29	2247
	Regulus	E.	75 35 17	2260	73 48 19	2257	72 1 16	2254	70 14 9	2252
9	SATURN	W.	56 34 28	2249	58 21 43	2248	60 9 0	2247	61 56 18	2246
	α Arietis	W.	50 55 44	2350	52 40 31	2343	54 25 29	2337	56 10 35	2332
	Aldebaran	W.	20 46 1	2517	22 26 50	2480	24 8 32	2447	25 51 1	2419
	Regulus	E.	61 17 49	2244	59 30 27	2243	57 43 4	2243	55 55 41	2243
	Spica	E.	115 20 43	2237	113 33 13	2237	111 45 41	2237	109 58 8	2236
10	SATURN	W.	70 52 48	2249	72 40 2	2251	74 27 14	2253	76 14 22	2256
	α Arietis	W.	64 57 34	2317	66 43 8	2317	68 28 43	2317	70 14 18	2318
	Aldebaran	W.	34 31 11	2342	36 16 10	2334	38 1 20	2328	39 46 39	2324
	Regulus	E.	46 59 6	2252	45 11 56	2256	43 24 51	2260	41 37 52	2264
	Spica	E.	101 0 17	2238	99 12 46	2240	97 25 17	2242	95 37 52	2244
	JUPITER	E.	122 4 19	2245	120 16 50	2248	118 29 34	2250	116 42 21	2252

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	31 30 1	2971	33 0 50	2958	34 31 55	2945	36 3 17	2933
	Saturn	E.	47 15 24	2586	45 36 10	2578	43 56 45	2571	42 17 10	2563
	Aldebaran	E.	84 54 13	2604	83 15 23	2596	81 36 23	2588	79 57 12	2581
2	Sun	W.	43 43 39	2880	45 16 23	2870	46 49 20	2861	48 22 29	2852
	Saturn	E.	33 56 38	2527	32 16 2	2520	30 35 16	2513	28 54 21	2507
	Aldebaran	E.	71 38 52	2547	69 58 44	2541	68 18 27	2535	66 38 2	2528
	Pollux	E.	115 34 45	2509	113 53 44	2501	112 12 32	2494	110 31 10	2487
3	Sun	W.	56 11 3	2809	57 45 19	2801	59 19 45	2793	60 54 22	2785
	Saturn	E.	20 27 29	2476	18 45 42	2471	17 3 48	2466	15 19 47	2462
	Aldebaran	E.	58 13 57	2502	56 32 46	2497	54 51 29	2493	53 10 6	2489
	Pollux	E.	102 1 51	2452	100 19 30	2445	98 36 59	2438	96 54 19	2431
4	Sun	W.	68 49 59	2747	70 25 36	2740	72 1 23	2733	73 37 19	2726
	Aldebaran	E.	44 41 56	2475	43 0 7	2475	41 18 18	2474	39 36 28	2474
	Pollux	E.	88 18 35	2399	86 34 59	2393	84 51 13	2387	83 7 19	2380
5	Sun	W.	81 39 19	2698	83 16 10	2685	84 53 10	2678	86 30 19	2672
	Aldebaran	E.	31 8 2	2498	29 26 45	2510	27 45 46	2525	26 5 8	2543
	Pollux	E.	74 25 32	2349	72 40 44	2343	70 55 48	2337	69 10 43	2332
	Regulus	E.	110 51 12	2361	109 6 41	2355	107 22 1	2349	105 37 12	2343
6	Sun	W.	94 38 9	2642	96 16 7	2637	97 54 12	2631	99 32 25	2625
	Saturn	W.	21 5 39	2327	22 50 59	2321	24 36 29	2315	26 22 7	2309
	Pollux	E.	60 23 15	2304	58 37 22	2299	56 51 21	2294	55 5 13	2289
	Regulus	E.	96 51 0	2314	95 5 21	2309	93 19 34	2303	91 33 39	2298
7	Sun	W.	107 45 16	2602	109 24 9	2598	111 3 7	2594	112 42 11	2590
	Saturn	W.	35 12 13	2285	36 58 35	2280	38 45 4	2276	40 31 39	2272
	Pollux	E.	46 12 49	2267	44 26 1	2263	42 39 7	2260	40 52 8	2257
	Regulus	E.	82 42 16	2275	80 55 40	2271	79 8 58	2267	77 22 10	2264
8	Sun	W.	120 58 37	2577	122 38 4	2575	124 17 34	2574	125 57 6	2573
	Saturn	W.	49 25 54	2256	51 12 58	2254	53 0 5	2252	54 47 15	2250
	α Arietis	W.	43 58 43	2388	45 42 35	2376	47 26 44	2366	49 11 8	2357
	Pollux	E.	31 56 11	2245	30 8 50	2243	28 21 27	2242	26 34 3	2242
	Regulus	E.	68 26 59	2250	66 39 45	2248	64 52 29	2246	63 5 10	2245
9	Saturn	W.	63 43 37	2246	65 30 56	2247	67 18 14	2247	69 5 32	2248
	α Arietis	W.	57 55 48	2327	59 41 8	2324	61 26 33	2321	63 12 2	2319
	Aldebaran	W.	27 34 10	2396	29 17 51	2378	31 1 58	2363	32 46 26	2351
	Regulus	E.	54 8 18	2244	52 20 56	2246	50 33 37	2247	48 46 20	2249
	Spica	E.	108 10 34	2235	106 22 59	2235	104 35 24	2236	102 47 50	2237
10	Saturn	W.	78 1 26	2259	79 48 25	2262	81 35 20	2266	83 22 9	2270
	α Arietis	W.	71 59 52	2319	73 45 24	2321	75 30 53	2323	77 16 19	2326
	Aldebaran	W.	41 32 3	2321	43 17 32	2319	45 3 4	2317	46 48 38	2317
	Regulus	E.	39 51 0	2269	38 4 16	2275	36 17 40	2282	34 31 14	2290
	Spica	E.	93 50 30	2247	92 3 12	2251	90 16 0	2254	88 28 53	2258
	Jupiter	E.	114 55 11	2255	113 8 5	2259	111 21 5	2262	109 34 10	2266

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
11	SATURN	W.	85 8 52	2275	86 55 28	2281	88 41 56	2286	90 28 16	2292
	α Arietis	W.	79 1 40	2330	80 46 56	2334	82 32 6	2339	84 17 9	2344
	Aldebaran	W.	48 34 12	2319	50 19 44	2321	52 5 14	2323	53 50 40	2326
	Regulus	E.	32 45 0	2299	30 58 59	2309	29 13 13	2320	27 27 43	2333
	Spica	E.	86 41 51	2263	84 54 57	2268	83 8 10	2274	81 21 32	2280
	JUPITER	E.	107 47 20	2271	106 0 37	2276	104 14 2	2281	102 27 34	2287
12	SATURN	W.	99 17 32	2328	101 2 50	2337	102 47 55	2346	104 32 47	2355
	α Arietis	W.	93 0 9	2380	94 44 13	2389	96 28 4	2398	98 11 42	2408
	Aldebaran	W.	62 36 18	2353	64 21 1	2360	66 5 33	2368	67 49 54	2376
	Pollux	W.	18 20 47	2331	20 6 2	2335	21 51 10	2341	23 36 10	2348
	Spica	E.	72 30 45	2316	70 45 9	2325	68 59 46	2334	67 14 36	2344
	JUPITER	E.	93 37 37	2323	91 52 10	2331	90 6 55	2340	88 21 53	2349
	Antares	E.	118 23 48	2311	116 38 4	2319	114 52 32	2328	113 7 12	2337
13	α Arietis	W.	106 46 2	2466	108 28 3	2479	110 9 47	2492	111 51 12	2506
	Aldebaran	W.	76 28 32	2424	78 11 33	2435	79 54 18	2446	81 36 47	2458
	Pollux	W.	32 18 19	2393	34 2 4	2404	35 45 34	2415	37 28 48	2426
	Spica	E.	58 32 26	2398	56 48 47	2410	55 5 26	2422	53 22 22	2435
	JUPITER	E.	79 40 13	2400	77 56 38	2412	76 13 20	2424	74 30 19	2436
	Antares	E.	104 24 5	2388	102 40 13	2400	100 56 38	2411	99 13 19	2423
14	Aldebaran	W.	90 4 54	2522	91 45 37	2536	93 26 0	2550	95 6 4	2564
	Pollux	W.	46 0 42	2489	47 42 11	2502	49 23 22	2516	51 4 13	2530
	Spica	E.	44 51 46	2504	43 10 38	2519	41 29 50	2534	39 49 24	2550
	JUPITER	E.	65 59 36	2499	64 18 22	2513	62 37 27	2527	60 56 52	2541
	Antares	E.	90 41 9	2487	88 59 38	2501	87 18 27	2515	85 37 35	2529
	MARS	E.	121 35 5	2735	119 59 12	2749	118 23 38	2763	116 48 22	2778
15	Aldebaran	W.	103 21 25	2639	104 59 27	2654	106 37 9	2669	108 14 30	2685
	Pollux	W.	59 23 37	2601	61 2 30	2615	62 41 4	2630	64 19 18	2645
	Regulus	W.	23 15 9	2674	24 52 24	2681	26 29 29	2689	28 6 24	2698
	Spica	E.	31 32 50	2635	29 54 42	2653	28 16 59	2672	26 39 42	2693
	JUPITER	E.	52 38 51	2614	51 0 15	2628	49 21 58	2643	47 44 2	2658
	Antares	E.	77 18 10	2602	75 39 17	2617	74 0 45	2632	72 22 33	2646
	MARS	E.	108 56 57	2854	107 23 39	2869	105 50 41	2885	104 18 3	2901
	α Aquilæ	E.	120 50 49	3792	119 35 38	3769	118 20 4	3748	117 4 8	3730
16	Pollux	W.	72 25 27	2719	74 1 42	2734	75 37 37	2748	77 13 13	2763
	Regulus	W.	36 7 45	2752	37 43 17	2764	39 18 32	2776	40 53 31	2789
	JUPITER	E.	39 39 22	2733	38 3 26	2747	36 27 49	2762	34 52 31	2777
	Antares	E.	64 16 33	2721	62 40 21	2735	61 4 28	2750	59 28 55	2765
	MARS	E.	96 39 53	2979	95 9 14	2995	93 38 55	3010	92 8 55	3025
	α Aquilæ	E.	110 40 41	3680	109 23 32	3676	108 6 19	3673	106 49 3	3671
17	Pollux	W.	85 6 34	2832	86 40 20	2845	88 13 49	2858	89 47 1	2871
	Regulus	W.	48 44 19	2852	50 17 40	2864	51 50 45	2876	53 23 34	2888
	JUPITER	E.	27 0 49	2849	25 27 24	2863	23 54 18	2877	22 21 30	2891
	Antares	E.	51 35 53	2836	50 2 12	2849	48 28 48	2862	46 55 41	2876
	MARS	E.	84 43 35	3100	83 15 25	3114	81 47 33	3128	80 19 58	3142
	α Aquilæ	E.	100 22 49	3686	99 5 47	3692	97 48 51	3699	96 32 3	3707
	SUN	E.	130 21 40	3223	128 55 58	3236	127 30 32	3250	126 5 22	3263

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
11	SATURN	W.	92 14 28	2298	94 0 30	2305	95 46 22	2313	97 32 3	2321
	α Arietis	W.	86 2 4	2350	87 46 50	2357	89 31 27	2364	91 15 53	2372
	Aldebaran	W.	55 36 1	2330	57 21 17	2335	59 6 25	2340	60 51 26	2346
	Regulus	E.	25 42 33	2349	23 57 45	2367	22 13 23	2388	20 29 31	2411
	Spica	E.	79 35 2	2286	77 48 42	2293	76 2 32	2300	74 16 33	2308
	JUPITER	E.	100 41 15	2293	98 55 5	2300	97 9 5	2307	95 23 15	2315
12	SATURN	W.	106 17 26	2365	108 1 51	2375	109 46 1	2386	111 29 56	2396
	α Arietis	W.	99 55 5	2419	101 38 13	2430	103 21 6	2441	105 3 43	2453
	Aldebaran	W.	69 34 4	2385	71 18 1	2394	73 1 45	2403	74 45 16	2413
	Pollux	W.	25 21 0	2355	27 5 39	2364	28 50 6	2373	30 34 19	2383
	Spica	E.	65 29 40	2354	63 44 59	2364	62 0 32	2375	60 16 21	2386
	JUPITER	E.	86 37 5	2358	84 52 30	2368	83 8 10	2378	81 24 4	2389
	Antares	E.	111 22 6	2346	109 37 14	2356	107 52 36	2366	106 8 13	2377
13	α Arietis	W.	113 32 17	2521	115 13 2	2536	116 53 25	2552	118 33 26	2569
	Aldebaran	W.	83 18 59	2470	85 0 54	2482	86 42 32	2495	88 23 52	2508
	Pollux	W.	39 11 45	2438	40 54 25	2450	42 36 48	2462	44 18 54	2475
	Spica	E.	51 39 37	2448	49 57 10	2462	48 15 3	2475	46 33 15	2489
	JUPITER	E.	72 47 35	2448	71 5 9	2460	69 23 0	2473	67 41 9	2486
	Antares	E.	97 30 17	2436	95 47 33	2448	94 5 7	2461	92 22 59	2474
14	Aldebaran	W.	96 45 49	2578	98 25 14	2593	100 4 18	2608	101 43 2	2624
	Pollux	W.	52 44 45	2544	54 24 57	2558	56 4 50	2572	57 44 23	2586
	Spica	E.	38 9 20	2566	36 29 38	2583	34 50 19	2599	33 11 23	2616
	JUPITER	E.	59 16 36	2556	57 36 40	2570	55 57 4	2585	54 17 48	2599
	Antares	E.	83 57 2	2543	82 16 49	2558	80 36 56	2572	78 57 23	2587
	MARS	E.	115 13 26	2793	113 38 49	2808	112 4 32	2823	110 30 35	2838
15	Aldebaran	W.	109 51 30	2701	111 28 9	2717	113 4 26	2733	114 40 22	2748
	Pollux	W.	65 57 12	2660	67 34 45	2675	69 11 59	2689	70 48 53	2704
	Regulus	W.	29 43 7	2707	31 19 38	2717	32 55 55	2728	34 31 58	2740
	Spica	E.	25 2 53	2715	23 26 33	2738	21 50 43	2762	20 15 25	2788
	JUPITER	E.	46 6 26	2673	44 29 10	2688	42 52 14	2703	41 15 38	2718
	Antares	E.	70 44 41	2661	69 7 9	2676	67 29 57	2691	65 53 5	2706
	MARS	E.	102 45 45	2916	101 13 47	2932	99 42 9	2948	98 10 51	2964
	α Aquilæ	E.	115 47 53	3716	114 31 23	3703	113 14 39	3693	111 57 44	3685
16	Pollux	W.	78 48 30	2777	80 23 28	2791	81 58 8	2805	83 32 30	2818
	Regulus	W.	42 28 13	2802	44 2 39	2815	45 36 48	2827	47 10 42	2839
	JUPITER	E.	33 17 33	2791	31 42 54	2806	30 8 33	2821	28 34 32	2835
	Antares	E.	57 53 41	2779	56 18 46	2794	54 44 10	2808	53 9 52	2822
	MARS	E.	90 39 13	3041	89 9 51	3056	87 40 47	3071	86 12 2	3086
	α Aquilæ	E.	105 31 45	3672	104 14 28	3673	102 57 12	3675	101 39 58	3679
17	Pollux	W.	91 19 57	2883	92 52 37	2896	94 25 1	2908	95 57 10	2920
	Regulus	W.	54 56 8	2900	56 28 27	2912	58 0 31	2923	59 32 21	2934
	JUPITER	E.	20 48 59	2905	19 16 46	2919	17 44 51	2933	16 13 14	2946
	Antares	E.	45 22 51	2889	43 50 18	2901	42 18 1	2914	40 46 0	2926
	MARS	E.	78 52 39	3155	77 25 37	3168	75 58 50	3181	74 32 18	3194
	α Aquilæ	E.	95 15 23	3714	93 58 51	3723	92 42 29	3733	91 26 17	3744
	SUN	E.	124 40 27	3276	123 15 47	3288	121 51 22	3300	120 27 11	3312

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
18	Pollux	W.	97 29 4	2931	99 0 43	2942	100 32 9	2952	102 3 21	2962
	Regulus	W.	61 3 56	2945	62 35 18	2955	64 6 26	2965	65 37 22	2975
	Antares	E.	39 14 14	2938	37 42 43	2950	36 11 27	2961	34 40 25	2972
	Mars	E.	73 6 2	3206	71 40 1	3218	70 14 13	3230	68 48 39	3241
	α Aquilæ	E.	90 10 16	3755	88 54 27	3767	87 38 51	3779	86 23 27	3792
	Sun	E.	119 3 13	3324	117 39 29	3335	116 15 59	3346	114 52 41	3357
19	Pollux	W.	109 36 21	3008	111 6 24	3016	112 36 17	3023	114 6 2	3030
	Regulus	W.	73 9 7	3019	74 38 56	3026	76 8 36	3033	77 38 7	3040
	Spica	W.	19 15 48	3085	20 44 16	3084	22 12 45	3085	23 41 12	3085
	Antares	E.	27 8 37	3024	25 38 54	3034	24 9 23	3043	22 40 4	3053
	Mars	E.	61 43 56	3290	60 19 33	3299	58 55 20	3307	57 31 17	3315
	α Aquilæ	E.	80 10 3	3866	78 56 9	3884	77 42 33	3901	76 29 14	3919
	Sun	E.	107 59 6	3405	106 36 55	3412	105 14 52	3420	103 52 58	3427
20	Regulus	W.	85 3 49	3067	86 32 39	3071	88 1 24	3074	89 30 5	3077
	Spica	W.	31 3 29	3089	32 31 52	3090	34 0 14	3091	35 28 35	3092
	Mars	E.	50 33 5	3347	49 9 48	3352	47 46 37	3356	46 23 31	3360
	α Aquilæ	E.	70 27 26	4021	69 16 7	4044	68 5 11	4069	66 54 39	4095
	Sun	E.	97 5 19	3456	95 44 6	3460	94 22 57	3463	93 1 52	3467
21	Regulus	W.	96 52 47	3085	98 21 15	3086	99 49 42	3085	101 18 10	3084
	Spica	W.	42 50 7	3092	44 18 26	3091	45 46 47	3090	47 15 9	3088
	Jupiter	W.	21 15 11	3091	22 43 32	3089	24 11 55	3087	25 40 20	3085
	α Aquilæ	E.	61 8 38	4246	60 0 55	4281	58 53 44	4320	57 47 10	4362
	Sun	E.	86 17 10	3475	84 56 18	3475	83 35 26	3474	82 14 34	3473
22	Regulus	W.	108 40 58	3073	110 9 41	3069	111 38 28	3065	113 7 20	3061
	Spica	W.	54 37 44	3072	56 6 27	3068	57 35 16	3063	59 4 11	3058
	Jupiter	W.	33 3 10	3070	34 31 56	3066	36 0 47	3061	37 29 44	3056
	α Aquilæ	E.	52 24 29	4615	51 22 17	4678	50 20 59	4747	49 20 39	4821
	Sun	E.	75 29 40	3461	74 8 32	3457	72 47 19	3452	71 26 1	3446
23	Spica	W.	66 30 29	3026	68 0 9	3018	69 29 59	3010	70 59 59	3001
	Jupiter	W.	44 56 15	3024	46 25 58	3016	47 55 51	3008	49 25 54	3000
	Antares	W.	20 38 0	3042	22 7 21	3032	23 36 54	3022	25 6 40	3011
	Sun	E.	64 37 55	3415	63 15 55	3407	61 53 46	3399	60 31 28	3390
24	Spica	W.	78 32 43	2955	80 3 52	2945	81 35 13	2935	83 6 48	2924
	Jupiter	W.	56 58 52	2953	58 30 4	2942	60 1 29	2931	61 33 8	2920
	Antares	W.	32 38 48	2957	34 9 54	2946	35 41 14	2935	37 12 48	2924
	Sun	E.	53 37 26	3343	52 14 4	3333	50 50 31	3322	49 26 45	3312
25	Spica	W.	90 48 17	2866	92 21 19	2854	93 54 37	2842	95 28 11	2829
	Jupiter	W.	69 14 57	2862	70 48 4	2850	72 21 27	2838	73 55 6	2828
	Antares	W.	44 54 22	2864	46 27 27	2851	48 0 48	2838	49 34 26	2826
	Sun	E.	42 24 44	3255	40 59 40	3243	39 34 22	3232	38 8 51	3221
26	Spica	W.	103 20 5	2766	104 55 18	2753	106 30 48	2740	108 6 35	2726
	Jupiter	W.	81 47 31	2760	83 22 51	2747	84 58 29	2734	86 34 24	2720
	Antares	W.	57 26 46	2761	59 2 5	2747	60 37 42	2734	62 13 37	2721
	Sun	E	30 57 59	3168	29 31 11	3159	28 4 13	3151	26 37 4	3143

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
18	Pollux	W.	103 34 21	2972	105 5 8	2981	106 35 44	2991	108 6 8	3000
	Regulus	W.	67 8 6	2985	68 38 38	2994	70 8 58	3002	71 39 8	3011
	Antares	E.	33 9 37	2982	31 39 2	2993	30 8 41	3004	28 38 33	3014
	MARS	E.	67 23 18	3252	65 58 10	3262	64 33 14	3272	63 8 30	3281
	α Aquilæ	E.	85 8 17	3806	83 53 21	3820	82 38 40	3835	81 24 14	3850
	SUN	E.	113 29 35	3367	112 6 41	3377	110 43 59	3386	109 21 27	3396
19	Pollux	W.	115 35 38	3036	117 5 6	3042	118 34 27	3048	120 3 40	3053
	Regulus	W.	79 7 30	3046	80 36 45	3052	82 5 53	3058	83 34 54	3063
	Spica	W.	25 9 39	3084	26 38 8	3085	28 6 37	3086	29 35 4	3087
	Antares	E.	21 10 57	3064	19 42 3	3075	18 13 23	3086	16 44 56	3096
	MARS	E.	56 7 23	3382	54 43 37	3329	53 19 59	3335	51 56 28	3342
	α Aquilæ	E.	75 16 13	3938	74 3 31	3957	72 51 9	3978	71 39 7	3999
	SUN	E.	102 31 12	3434	101 9 34	3440	99 48 3	3446	98 26 38	3451
20	Regulus	W.	90 58 43	3080	92 27 17	3082	93 55 49	3084	95 24 19	3085
	Spica	W.	36 56 54	3093	38 25 12	3093	39 53 30	3093	41 21 48	3092
	MARS	E.	45 0 29	3364	43 37 32	3367	42 14 38	3370	40 51 48	3372
	α Aquilæ	E.	65 44 32	4121	64 34 51	4150	63 25 37	4180	62 16 52	4212
	SUN	E.	91 40 51	3469	90 19 53	3471	88 58 57	3473	87 38 3	3474
21	Regulus	W.	102 46 39	3082	104 15 10	3080	105 43 43	3078	107 12 19	3076
	Spica	W.	48 43 34	3086	50 12 1	3083	51 40 31	3080	53 9 5	3076
	JUPITER	W.	27 8 48	3083	28 37 18	3081	30 5 51	3078	31 34 28	3074
	α Aquilæ	E.	56 41 14	4406	55 35 58	4452	54 31 23	4502	53 27 32	4556
	SUN	E.	80 53 40	3471	79 32 44	3469	78 11 46	3467	76 50 45	3464
22	Regulus	W.	114 36 17	3056	116 5 20	3051	117 34 30	3045	119 3 47	3038
	Spica	W.	60 33 12	3052	62 2 20	3046	63 31 35	3040	65 0 58	3034
	JUPITER	W.	38 58 47	3050	40 27 57	3044	41 57 15	3038	43 26 41	3031
	α Aquilæ	E.	48 21 20	4908	47 23 7	4991	46 26 5	5088	45 30 18	5195
	SUN	E.	70 4 37	3441	68 43 7	3435	67 21 31	3429	65 59 47	3422
23	Spica	W.	72 30 10	2993	74 0 31	2984	75 31 3	2975	77 1 47	2965
	JUPITER	W.	50 56 7	2991	52 26 31	2982	53 57 6	2973	55 27 53	2963
	Antares	W.	26 36 39	3001	28 6 51	2990	29 37 16	2979	31 7 55	2968
	SUN	E.	59 9 1	3381	57 46 23	3372	56 23 35	3363	55 0 36	3353
24	Spica	W.	84 38 37	2912	86 10 40	2901	87 42 57	2889	89 15 30	2878
	JUPITER	W.	63 5 1	2909	64 37 8	2898	66 9 30	2887	67 42 6	2875
	Antares	W.	38 44 36	2912	40 16 40	2900	41 48 58	2888	43 21 32	2876
	SUN	E.	48 2 47	3300	46 38 36	3289	45 14 12	3278	43 49 35	3266
25	Spica	W.	97 2 1	2817	98 36 7	2804	100 10 30	2792	101 45 9	2779
	JUPITER	W.	75 29 2	2812	77 3 14	2799	78 37 42	2786	80 12 28	2773
	Antares	W.	51 8 20	2813	52 42 31	2800	54 16 59	2787	55 51 44	2774
	SUN	E.	36 43 7	3209	35 17 9	3198	33 50 58	3188	32 24 35	3178
26	Spica	W.	109 42 40	2713	111 19 2	2701	112 55 40	2688	114 32 36	2676
	JUPITER	W.	88 10 37	2707	89 47 8	2694	91 23 56	2681	93 1 2	2668
	Antares	W.	63 49 49	2708	65 26 19	2695	67 3 6	2681	68 40 11	2668
	SUN	E.	25 9 46	3137	23 42 21	3133	22 14 51	3131	20 47 19	3130

AT GREENWICH APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Semi-diameter.	Sidereal Time of Semi-diameter Passing Meridian.	Equation of Time, to be Added to Apparent Time.	Diff. for 1 Hour.
		h m s	s	° ′ ″	″	′ ″	s	m s	s
Wed.	1	22 45 24.32	+9.385	S. 7 53 53.2	+56.77	16 10.18	65.47	12 40.85	0.470
Thur.	2	22 49 9.30	9.363	7 31 7.3	57.05	16 9.94	65.39	12 29.30	0.492
Frid.	3	22 52 53.76	9.342	7 8 14.9	57.31	16 9.70	65.32	12 17.24	0.513
Sat.	4	22 56 37.72	+9.321	6 45 16.4	+57.55	16 9.46	65.25	12 4.68	0.533
SUN.	5	23 0 21.19	9.301	6 22 12.4	57.77	16 9.22	65.18	11 51.64	0.553
Mon.	6	23 4 4.20	9.282	5 59 3.2	57.98	16 8.98	65.12	11 38.13	0.573
Tues.	7	23 7 46.75	+9.264	5 35 49.3	+58.17	16 8.73	65.06	11 24.16	0.591
Wed.	8	23 11 28.87	9.247	5 12 31.0	58.34	16 8.48	65.00	11 9.77	0.608
Thur.	9	23 15 10.58	9.230	4 49 8.7	58.50	16 8.22	64.94	10 54.97	0.624
Frid.	10	23 18 51.91	+9.214	4 25 42.9	+58.65	16 7.96	64.89	10 39.78	0.640
Sat.	11	23 22 32.87	9.199	4 2 13.8	58.78	16 7.71	64.84	10 24.23	0.655
SUN.	12	23 26 13.48	9.185	3 38 41.8	58.88	16 7.45	64.79	10 8.33	0.669
Mon.	13	23 29 53.77	+9.172	3 15 7.4	+58.97	16 7.20	64.75	9 52.11	0.682
Tues.	14	23 33 33.76	9.160	2 51 30.8	59.06	16 6.94	64.71	9 35.59	0.694
Wed.	15	23 37 13.48	9.150	2 27 52.4	59.13	16 6.68	64.67	9 18.80	0.705
Thur.	16	23 40 52.95	+9.140	2 4 12.5	+59.18	16 6.41	64.63	9 1.77	0.715
Frid.	17	23 44 32.20	9.131	1 40 31.4	59.22	16 6.14	64.60	8 44.51	0.724
Sat.	18	23 48 11.24	9.123	1 16 49.6	59.25	16 5.88	64.57	8 27.05	0.732
SUN.	19	23 51 50.10	+9.116	0 53 7.4	+59.26	16 5.61	64.54	8 9.41	0.739
Mon.	20	23 55 28.81	9.110	0 29 25.1	59.26	16 5.33	64.52	7 51.61	0.745
Tues.	21	23 59 7.38	9.105	S. 0 5 43.0	59.24	16 5.05	64.50	7 33.67	0.750
Wed.	22	0 2 45.83	+9.101	N. 0 17 58.5	+59.21	16 4.76	64.48	7 15.62	0.754
Thur.	23	0 6 24.19	9.097	0 41 39.0	59.16	16 4.48	64.46	6 57.48	0.757
Frid.	24	0 10 2.48	9.094	1 5 18.2	59.10	16 4.20	64.45	6 39.27	0.760
Sat.	25	0 13 40.72	+9.092	1 28 55.7	+59.02	16 3.92	64.44	6 21.00	0.762
SUN.	26	0 17 18.92	9.091	1 52 31.2	58.93	16 3.64	64.44	6 2.70	0.763
Mon.	27	0 20 57.11	9.091	2 16 4.3	58.82	16 3.36	64.44	5 44.38	0.763
Tues.	28	0 24 35.30	+9.092	2 39 34.6	+58.70	16 3.08	64.44	5 26.07	0.762
Wed.	29	0 28 13.52	9.093	3 3 1.8	58.56	16 2.79	64.44	5 7.79	0.761
Thur.	30	0 31 51.78	9.095	3 26 25.6	58.41	16 2.51	64.44	4 49.55	0.759
Frid.	31	0 35 30.10	9.098	3 49 45.4	58.24	16 2.23	64.45	4 31.36	0.757
Sat.	32	0 39 8.48	+9.101	N. 4 13 0.9	+58.05	16 1.96	64.46	4 13.24	0.754

NOTE.—The mean time of semidiameter passing the meridian may be found by subtracting 0s.18 from the sidereal time. The sign + prefixed to the hourly change of declination indicates that south declinations are decreasing or north declinations are increasing.

AT GREENWICH MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Equation of Time, to be Subtracted from Mean Time.	Diff. for 1 Hour.	Sidereal Time, or Right Ascension of Mean Sun.
		h m s	s	° ′ ″	″	m s	s	h m s
Wed.	1	22 45 22.34	+9.386	S. 7 54 5.3	+56.78	12 40.96	+0.470	22 32 41.39
Thur.	2	22 49 7.35	9.365	7 31 19.2	57.06	12 29.41	0.492	22 36 37.94
Frid.	3	22 52 51.84	9.344	7 8 26.6	57.32	12 17.35	0.513	22 40 34.50
Sat.	4	22 56 35.84	+9.323	6 45 28.0	+57.56	12 4.79	+0.533	22 44 31.05
SUN.	5	23 0 19.36	9.303	6 22 23.8	57.78	11 51.75	0.553	22 48 27.60
Mon.	6	23 4 2.40	9.284	5 59 14.4	57.99	11 38.24	0.573	22 52 24.16
Tues.	7	23 7 44.99	+9.266	5 36 0.3	+58.18	11 24.27	+0.591	22 56 20.71
Wed	8	23 11 27.15	9.248	5 12 41.8	58.35	11 9.88	0.608	23 0 17.26
Thur.	9	23 15 8.90	9.232	4 49 19.4	58.51	10 55.08	0.624	23 4 13.82
Frid.	10	23 18 50.27	+9.216	4 25 53.3	+58.66	10 39.90	+0.640	23 8 10.37
Sat.	11	23 22 31.27	9.201	4 2 24.0	58.78	10 24.35	0.655	23 12 6.92
SUN.	12	23 26 11.92	9.187	3 38 51.8	58.89	10 8.45	0.669	23 16 3.48
Mon.	13	23 29 52.25	+9.174	3 15 17.1	+58.99	9 52.22	+0.682	23 20 0.03
Tues.	14	23 33 32.29	9.162	2 51 40.3	59.07	9 35.70	0.694	23 23 56.59
Wed.	15	23 37 12.05	9.152	2 28 1.6	59.14	9 18.91	0.705	23 27 53.14
Thur.	16	23 40 51.57	+9.142	2 4 21.4	+59.20	9 1.88	+0.715	23 31 49.69
Frid.	17	23 44 30.87	9.133	1 40 40.1	59.24	8 44.62	0.724	23 35 46.25
Sat.	18	23 48 9.96	9.125	1 16 58.0	59.27	8 27.16	0.732	23 39 42.80
SUN.	19	23 51 48.86	+9.118	0 53 15.4	+59.28	8 9.51	+0.739	23 43 39.35
Mon.	20	23 55 27.61	9.112	0 29 32.8	59.27	7 51.71	0.745	23 47 35.91
Tues.	21	23 59 6.23	9.106	S. 0 5 50.4	59.25	7 33.77	0.750	23 51 32.46
Wed.	22	0 2 44.73	+9.102	N. 0 17 51.4	+59.22	7 15.72	+0.754	23 55 29.01
Thur.	23	0 6 23.14	9.099	0 41 32.2	59.17	6 57.57	0.757	23 59 25.57
Frid.	24	0 10 1.47	9.096	1 5 11.6	59.11	6 39.35	0.760	0 3 22.12
Sat.	25	0 13 39.75	+9.094	1 28 49.4	+59.03	6 21.08	+0.762	0 7 18.67
SUN.	26	0 17 18.00	9.093	1 52 25.2	58.94	6 2.78	0.763	0 11 15.23
Mon.	27	0 20 56.24	9.093	2 15 58.6	58.84	5 44.46	0.763	0 15 11.78
Tues.	28	0 24 34.48	+9.094	2 39 29.3	+58.72	5 26.15	+0.762	0 19 8.33
Wed.	29	0 28 12.75	9.095	3 2 56.9	58.58	5 7.86	0.761	0 23 4.89
Thur.	30	0 31 51.05	9.097	3 26 20.9	58.42	4 49.61	0.759	0 27 1.44
Frid.	31	0 35 29.41	9.100	3 49 41.0	58.25	4 31.42	0.757	0 30 58.00
Sat.	32	0 39 7.84	+9.103	N. 4 12 56.8	+58.06	4 13.29	+0.754	0 34 54.55

NOTE.—The semidiameter for mean noon may be assumed the same as that for apparent noon.
The sign + prefixed to the hourly change of declination indicates that south declinations are decreasing or north declinations increasing.

Diff. for 1 Hour, +9s.8565. (Table III.)

AT GREENWICH MEAN NOON.

Day of the Month.	Day of the Year.	THE SUN'S TRUE LONGITUDE. λ	THE SUN'S TRUE LONGITUDE. λ'	Diff. for 1 Hour.	THE SUN'S LATITUDE.	Logarithm of the Radius Vector of the Earth.	Diff. for 1 Hour.	Mean Time of Sidereal Noon.
		° ′ ″	′ ″	″	″			h m s
1	60	339 47 58.5	48 1.1	150.57	− 0.67	9.996 0992	+ 44.5	1 27 4.31
2	61	340 48 11.3	48 13.8	150.49	0.59	9.996 2063	44.7	1 23 8.40
3	62	341 48 22.2	48 24.5	150.41	0.47	9.996 3139	44.9	1 19 12.49
4	63	342 48 31.1	48 33.3	150.33	− 0.34	9.996 4220	+ 45.2	1 15 16.58
5	64	343 48 38.0	48 40.0	150.24	0.21	9.996 5306	45.4	1 11 20.68
6	65	344 48 42.7	48 44.6	150.15	− 0.07	9.996 6399	45.7	1 7 24.77
7	66	345 48 45.2	48 47.1	150.06	+ 0.06	9.996 7500	+ 46.0	1 3 28.86
8	67	346 48 45.6	48 47.4	149.97	0.17	9.996 8610	46.4	0 59 32.95
9	68	347 48 43.8	48 45.5	149.88	0.26	9.996 9729	46.8	0 55 37.05
10	69	348 48 39.7	48 41.3	149.79	+ 0.32	9.997 0858	+ 47.3	0 51 41.14
11	70	349 48 33.5	48 34.9	149.70	0.36	9.997 1999	47.8	0 47 45.23
12	71	350 48 25.1	48 26.4	149.61	0.34	9.997 3153	48.3	0 43 49.32
13	72	351 48 14.6	48 15.9	149.52	+ 0.32	9.997 4319	+ 48.9	0 39 53.42
14	73	352 48 2.1	48 3.3	149.44	0.26	9.997 5498	49.4	0 35 57.51
15	74	353 47 47.6	47 48.6	149.35	0.17	9.997 6690	49.9	0 32 1.60
16	75	354 47 31.1	47 32.0	149.27	+ 0.07	9.997 7894	+ 50.4	0 28 5.69
17	76	355 47 12.8	47 13.5	149.20	− 0.05	9.997 9110	50.9	0 24 9.78
18	77	356 46 52.6	46 53.2	149.12	0.16	9.998 0336	51.3	0 20 13.88
19	78	357 46 30.5	46 31.1	149.04	− 0.29	9.998 1572	+ 51.6	0 16 17.97
20	79	358 46 6.7	46 7.2	148.97	0.41	9.998 2816	51.9	0 12 22.06
21	80	359 45 41.1	45 41.5	148.90	0.52	9.998 4066	52.2	0 8 26.15
22	81	0 45 13.7	45 14.0	148.82	− 0.62	9.998 5322	+ 52.4	0 4 30.25
23	82	1 44 44.5	44 44.7	148.75	0.70	9.998 6582	52.6	{ 0 0 34.34 / 23 56 38.43 }
24	83	2 44 13.6	44 13.7	148.68	0.75	9.998 7845	52.7	23 52 42.52
25	84	3 43 41.0	43 40.9	148.60	− 0.79	9.998 9110	+ 52.7	23 48 46.62
26	85	4 43 6.5	43 6.3	148.53	0.78	9.999 0375	52.7	23 44 50.71
27	86	5 42 30.2	42 30.0	148.45	0.75	9.999 1638	52.6	23 40 54.80
28	87	6 41 52.1	41 51.8	148.37	− 0.68	9.999 2898	+ 52.4	23 36 58.89
29	88	7 41 12.0	41 11.6	148.29	0.59	9.999 4154	52.2	23 33 2.98
30	89	8 40 30.0	40 29.4	148.21	0.48	9.999 5404	52.0	23 29 7.08
31	90	9 39 46.0	39 45.2	148.12	0.35	9.999 6649	51.7	23 25 11.17
32	91	10 38 59.8	38 59.0	148.03	− 0.22	9.999 7888	+ 51.5	23 21 15.26

NOTE.—The longitudes in the column λ are referred to the true equinox of their own date, while those in the column λ' are referred to the mean equinox of the beginning of the Besselian fictitious year.

Diff. for 1 Hour, −9s.8296. (Table II.)

GREENWICH MEAN TIME.

THE MOON'S

Day of the Month.	SEMIDIAMETER.		HORIZONTAL PARALLAX.				UPPER TRANSIT.		AGE.
	Noon.	Midnight.	Noon.	Diff. for 1 Hour.	Midnight.	Diff. for 1 Hour.	Meridian of Greenwich.	Diff. for 1 Hour.	Noon.
	′ ″	′ ″	′ ″	″	′ ″	″	h m	m	d
1	15 47.2	15 51.6	57 50.5	+ 1.39	58 6.5	+ 1.28	0 43.0	1.97	9.5
2	15 55.6	15 59.1	58 21.1	1.15	58 34.0	1.01	1 29.9	1.95	1.5
3	16 2.1	16 4.7	58 45.2	0.86	58 54.6	0.71	2 17.0	1.98	2.5
4	16 6.8	16 8.4	59 2.3	+ 0.57	59 8.2	+ 0.42	3 5.3	2.06	3.5
5	16 9.5	16 10.3	59 12.4	0.28	59 15.1	+ 0.16	3 56.2	2.18	4.5
6	16 10.6	16 10.6	59 16.3	+ 0.05	59 16.2	− 0.06	4 50.4	2.33	5.5
7	16 10.2	16 9.5	59 14.8	− 0.16	59 12.3	− 0.25	5 48.4	2.48	6.5
8	16 8.5	16 7.3	59 8.7	0.34	59 4.1	0.43	6 49.2	2.57	7.5
9	16 5.7	16 3.9	58 58.4	0.52	58 51.7	0.61	7 51.0	2.56	8.5
10	16 1.8	15 59.4	58 43.9	− 0.70	58 35.0	− 0.79	8 51.5	2.46	9.5
11	15 56.6	15 53.6	58 25.0	0.88	58 13.9	0.97	9 48.6	2.29	10.5
12	15 50.3	15 46.7	58 1.7	1.06	57 48.4	1.15	10 41.5	2.12	11.5
13	15 42.8	15 38.6	57 34.1	− 1.23	57 18.9	− 1.30	11 30.4	1.97	12.5
14	15 34.3	15 29.8	57 2.9	1.35	56 46.4	1.39	12 16.0	1.85	13.5
15	15 25.2	15 20.5	56 29.6	1.41	56 12.6	1.41	12 59.5	1.79	14.5
16	15 15.9	15 11.5	55 55.7	− 1.39	55 39.3	− 1.34	13 42.0	1.77	15.5
17	15 7.2	15 3.2	55 23.6	1.27	55 8.8	1.18	14 24.4	1.78	16.5
18	14 59.5	14 56.2	54 55.3	1.06	54 43.3	0.93	15 7.8	1.84	17.5
19	14 53.4	14 51.1	54 33.0	− 0.77	54 24.7	− 0.60	15 52.9	1.91	18.5
20	14 49.5	14 48.4	54 18.6	0.42	54 14.7	− 0.22	16 40.0	2.01	19.5
21	14 48.0	14 48.3	54 13.2	− 0.02	54 14.2	+ 0.20	17 29.3	2.10	20.5
22	14 49.3	14 51.0	54 17.9	+ 0.42	54 24.2	+ 0.63	18 20.4	2.15	21.5
23	14 53.4	14 56.5	54 33.0	0.84	54 44.4	1.05	19 12.4	2.17	22.5
24	15 0.3	15 4.7	54 58.3	1.25	55 14.4	1.43	20 4.3	2.15	23.5
25	15 9.6	15 15.1	55 32.6	+ 1.60	55 52.7	+ 1.74	20 55.2	2.10	24.5
26	15 21.0	15 27.2	56 14.3	1.85	56 37.1	1.93	21 44.8	2.03	25.5
27	15 33.7	15 40.2	57 0.7	1.98	57 24.6	1.99	22 33.0	1.99	26.5
28	15 46.7	15 53.0	57 48.5	+ 1.95	58 11.5	+ 1.88	23 20.5	1.98	27.5
29	15 59.0	16 4.5	58 33.5	1.77	58 53.9	1.61	6	. .	28.5
30	16 9.5	16 13.8	59 12.2	1.41	59 27.9	1.19	0 8.2	2.00	29.5
31	16 17.3	16 20.0	59 40.8	0.95	59 50.7	0.70	0 57.0	2.08	1.0
32	16 21.8	16 22.8	59 57.5	+ 0.44	60 1.1	+ 0.18	1 48.3	2.20	2.0

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 1.			
	h m s	s	° ′ ″	″
0	23 14 19.62	2.0677	S. 9 28 21.0	14.822
1	23 16 23.64	2.0663	9 13 30.0	14.878
2	23 18 27.58	2.0651	8 58 35.6	14.934
3	23 20 31.45	2.0639	8 43 37.9	14.988
4	23 22 35.25	2.0628	8 28 37.0	15.042
5	23 24 38.98	2.0617	8 13 32.9	15.093
6	23 26 42.65	2.0606	7 58 25.8	15.143
7	23 28 46.25	2.0596	7 43 15.7	15.193
8	23 30 49.80	2.0587	7 28 2.7	15.241
9	23 32 53.29	2.0578	7 12 46.8	15.288
10	23 34 56.73	2.0569	6 57 28.2	15.333
11	23 37 0.12	2.0562	6 42 6.9	15.377
12	23 39 3.47	2.0555	6 26 43.0	15.419
13	23 41 6.78	2.0548	6 11 16.6	15.461
14	23 43 10.05	2.0543	5 55 47.7	15.501
15	23 45 13.29	2.0538	5 40 16.5	15.539
16	23 47 16.51	2.0534	5 24 43.0	15.577
17	23 49 19.70	2.0530	5 9 7.3	15.613
18	23 51 22.87	2.0528	4 53 29.5	15.648
19	23 53 26.03	2.0525	4 37 49.6	15.681
20	23 55 29.17	2.0523	4 22 7.8	15.713
21	23 57 32.31	2.0523	4 6 24.1	15.744
22	23 59 35.44	2.0522	3 50 38.6	15.773
23	0 1 38.57	2.0523	S. 3 34 51.3	15.801
	THURSDAY 2.			
0	0 3 41.71	2.0524	S. 3 19 2.4	15.828
1	0 5 44.86	2.0526	3 3 12.0	15.853
2	0 7 48.02	2.0528	2 47 20.1	15.877
3	0 9 51.19	2.0531	2 31 26.8	15.899
4	0 11 54.39	2.0535	2 15 32.2	15.920
5	0 13 57.61	2.0539	1 59 36.4	15.939
6	0 16 0.86	2.0544	1 43 39.5	15.958
7	0 18 4.14	2.0551	1 27 41.5	15.975
8	0 20 7.47	2.0558	1 11 42.5	15.990
9	0 22 10.83	2.0564	0 55 42.7	16.004
10	0 24 14.24	2.0572	0 39 42.0	16.018
11	0 26 17.70	2.0582	0 23 40.6	16.029
12	0 28 21.22	2.0592	S. 0 7 38.5	16.039
13	0 30 24.80	2.0602	N. 0 8 24.1	16.048
14	0 32 28.44	2.0613	0 24 27.2	16.054
15	0 34 32.15	2.0625	0 40 30.6	16.059
16	0 36 35.94	2.0638	0 56 34.3	16.063
17	0 38 39.80	2.0651	1 12 38.2	16.067
18	0 40 43.75	2.0665	1 28 42.3	16.068
19	0 42 47.78	2.0680	1 44 46.4	16.068
20	0 44 51.91	2.0696	2 0 50.5	16.067
21	0 46 56.13	2.0712	2 16 54.4	16.063
22	0 49 0.45	2.0729	2 32 58.1	16.058
23	0 51 4.88	2.0748	2 49 1.4	16.053
24	0 53 9.42	2.0766	N. 3 5 4.4	16.046

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 3.			
	h m s	s	° ′ ″	″
0	0 53 9.42	2.0766	N. 3 5 4.4	16.046
1	0 55 14.07	2.0785	3 21 6.9	16.037
2	0 57 18.84	2.0806	3 37 8.8	16.026
3	0 59 23.74	2.0827	3 53 10.0	16.014
4	1 1 28.76	2.0848	4 9 10.5	16.001
5	1 3 33.91	2.0870	4 25 10.1	15.986
6	1 5 39.20	2.0893	4 41 8.8	15.970
7	1 7 44.63	2.0918	4 57 6.5	15.953
8	1 9 50.21	2.0943	5 13 3.1	15.933
9	1 11 55.94	2.0968	5 28 58.5	15.913
10	1 14 1.82	2.0994	5 44 52.6	15.890
11	1 16 7.87	2.1022	6 0 45.3	15.866
12	1 18 14.08	2.1049	6 16 36.5	15.841
13	1 20 20.46	2.1078	6 32 26.2	15.814
14	1 22 27.01	2.1107	6 48 14.2	15.786
15	1 24 33.74	2.1137	7 4 0.5	15.756
16	1 26 40.65	2.1168	7 19 44.9	15.725
17	1 28 47.75	2.1199	7 35 27.5	15.693
18	1 30 55.04	2.1232	7 51 8.0	15.658
19	1 33 2.53	2.1265	8 6 46.4	15.622
20	1 35 10.22	2.1298	8 22 22.6	15.584
21	1 37 18.11	2.1333	8 37 56.5	15.545
22	1 39 26.21	2.1368	8 53 28.0	15.504
23	1 41 34.52	2.1403	N. 9 8 57.0	15.462
	SATURDAY 4.			
0	1 43 43.05	2.1440	N. 9 24 23.4	15.418
1	1 45 51.80	2.1478	9 39 47.2	15.373
2	1 48 0.78	2.1515	9 55 8.2	15.327
3	1 50 9.98	2.1553	10 10 26.4	15.278
4	1 52 19.42	2.1593	10 25 41.6	15.228
5	1 54 29.10	2.1633	10 40 53.7	15.176
6	1 56 39.02	2.1674	10 56 2.7	15.123
7	1 58 49.19	2.1716	11 11 8.5	15.068
8	2 0 59.61	2.1758	11 26 10.9	15.012
9	2 3 10.29	2.1801	11 41 9.9	14.954
10	2 5 21.22	2.1844	11 56 5.4	14.895
11	2 7 32.42	2.1888	12 10 57.3	14.833
12	2 9 43.88	2.1933	12 25 45.4	14.770
13	2 11 55.61	2.1978	12 40 29.7	14.706
14	2 14 7.62	2.2024	12 55 10.1	14.640
15	2 16 19.90	2.2071	13 9 46.5	14.572
16	2 18 32.47	2.2118	13 24 18.8	14.503
17	2 20 45.32	2.2166	13 38 46.9	14.433
18	2 22 58.46	2.2214	13 53 10.7	14.361
19	2 25 11.89	2.2263	14 7 30.2	14.287
20	2 27 25.62	2.2313	14 21 45.1	14.210
21	2 29 39.64	2.2363	14 35 55.4	14.133
22	2 31 53.97	2.2413	14 50 1.1	14.055
23	2 34 8.60	2.2464	15 4 2.0	13.974
24	2 36 23.54	2.2516	N. 15 17 58.0	13.892

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 5.			
	h m s	s	° ′ ″	″
0	2 36 23.54	2.2516	N.15 17 58.0	13.892
1	2 38 38.79	2.2568	15 31 49.0	13.808
2	2 40 54.35	2.2620	15 45 35.0	13.723
3	2 43 10.23	2.2673	15 59 15.8	13.636
4	2 45 26.43	2.2727	16 12 51.3	13.547
5	2 47 42.95	2.2781	16 26 21.4	13.457
6	2 49 59.80	2.2835	16 39 46.1	13.365
7	2 52 16.97	2.2889	16 53 5.2	13.272
8	2 54 34.47	2.2944	17 6 18.7	13.177
9	2 56 52.30	2.3000	17 19 26.4	13.079
10	2 59 10.47	2.3056	17 32 28.2	12.981
11	3 1 28.97	2.3112	17 45 24.1	12.881
12	3 3 47.81	2.3168	17 58 13.9	12.779
13	3 6 6.99	2.3225	18 10 57.6	12.676
14	3 8 26.51	2.3282	18 23 35.0	12.570
15	3 10 46.37	2.3338	18 36 6.0	12.463
16	3 13 6.57	2.3397	18 48 30.6	12.356
17	3 15 27.13	2.3455	19 0 48.7	12.246
18	3 17 48.03	2.3512	19 13 0.1	12.134
19	3 20 9.27	2.3570	19 25 4.8	12.022
20	3 22 30.87	2.3628	19 37 2.7	11.907
21	3 24 52.81	2.3686	19 48 53.6	11.790
22	3 27 15.10	2.3745	20 0 37.5	11.673
23	3 29 37.75	2.3803	N.20 12 14.3	11.553
	MONDAY 6.			
0	3 32 0.74	2.3861	N.20 23 43.9	11.432
1	3 34 24.08	2.3920	20 35 6.2	11.309
2	3 36 47.78	2.3979	20 46 21.0	11.185
3	3 39 11.83	2.4037	20 57 28.4	11.059
4	3 41 36.22	2.4095	21 8 28.1	10.932
5	3 44 0.97	2.4153	21 19 20.2	10.803
6	3 46 26.06	2.4212	21 30 4.5	10.673
7	3 48 51.51	2.4270	21 40 40.9	10.540
8	3 51 17.30	2.4328	21 51 9.3	10.407
9	3 53 43.44	2.4385	22 1 29.7	10.273
10	3 56 9.92	2.4443	22 11 42.0	10.136
11	3 58 36.75	2.4500	22 21 46.0	9.998
12	4 1 3.92	2.4557	22 31 41.7	9.858
13	4 3 31.43	2.4613	22 41 29.0	9.717
14	4 5 59.28	2.4669	22 51 7.7	9.574
15	4 8 27.46	2.4725	23 0 37.9	9.431
16	4 10 55.98	2.4781	23 9 59.4	9.285
17	4 13 24.83	2.4836	23 19 12.1	9.138
18	4 15 54.01	2.4890	23 28 16.0	8.991
19	4 18 23.51	2.4944	23 37 11.0	8.841
20	4 20 53.34	2.4998	23 45 56.9	8.689
21	4 23 23.49	2.5051	23 54 33.7	8.538
22	4 25 53.95	2.5103	24 3 1.4	8.384
23	4 28 24.72	2.5155	24 11 19.8	8.229
24	4 30 55.81	2.5207	N.24 19 28.9	8.073

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute
	TUESDAY 7.			
	h m s	s	° ′ ″	″
0	4 30 55.81	2.5207	N.24 19 28.9	8.073
1	4 33 27.20	2.5257	24 27 28.6	7.916
2	4 35 58.89	2.5307	24 35 18.8	7.757
3	4 38 30.88	2.5356	24 42 59.4	7.596
4	4 41 3.16	2.5403	24 50 30.3	7.435
5	4 43 35.72	2.5451	24 57 51.6	7.273
6	4 46 8.57	2.5498	25 5 3.1	7.109
7	4 48 41.70	2.5544	25 12 4.7	6.944
8	4 51 15.10	2.5588	25 18 56.4	6.778
9	4 53 48.76	2.5632	25 25 38.1	6.611
10	4 56 22.68	2.5675	25 32 9.7	6.443
11	4 58 56.86	2.5718	25 38 31.3	6.274
12	5 1 31.29	2.5758	25 44 42.6	6.103
13	5 4 5.96	2.5798	25 50 43.7	5.932
14	5 6 40.87	2.5838	25 56 34.5	5.760
15	5 9 16.01	2.5875	26 2 14.9	5.587
16	5 11 51.37	2.5912	26 7 44.9	5.413
17	5 14 26.95	2.5948	26 13 4.4	5.237
18	5 17 2.74	2.5982	26 18 13.3	5.061
19	5 19 38.73	2.6014	26 23 11.7	4.885
20	5 22 14.91	2.6046	26 27 59.5	4.708
21	5 24 51.28	2.6077	26 32 36.6	4.529
22	5 27 27.83	2.6106	26 37 3.0	4.350
23	5 30 4.55	2.6134	N.26 41 18.6	4.170
	WEDNESDAY 8.			
0	5 32 41.44	2.6162	N.26 45 23.4	3.990
1	5 35 18.49	2.6187	26 49 17.4	3.809
2	5 37 55.68	2.6210	26 53 0.5	3.627
3	5 40 33.01	2.6233	26 56 32.6	3.444
4	5 43 10.47	2.6254	26 59 53.8	3.262
5	5 45 48.06	2.6274	27 3 4.0	3.078
6	5 48 25.76	2.6293	27 6 3.2	2.894
7	5 51 3.57	2.6309	27 8 51.3	2.710
8	5 53 41.47	2.6324	27 11 28.4	2.526
9	5 56 19.46	2.6338	27 13 54.4	2.340
10	5 58 57.53	2.6351	27 16 9.2	2.154
11	6 1 35.67	2.6362	27 18 12.9	1.969
12	6 4 13.87	2.6371	27 20 5.5	1.783
13	6 6 52.12	2.6379	27 21 46.9	1.597
14	6 9 30.42	2.6386	27 23 17.1	1.410
15	6 12 8.75	2.6390	27 24 36.1	1.223
16	6 14 47.10	2.6393	27 25 43.9	1.037
17	6 17 25.47	2.6395	27 26 40.5	0.850
18	6 20 3.84	2.6395	27 27 25.9	0.663
19	6 22 42.21	2.6394	27 28 0.1	0.477
20	6 25 20.57	2.6391	27 28 23.1	0.289
21	6 27 58.90	2.6386	27 28 34.8	+0.103
22	6 30 37.20	2.6380	27 28 35.4	−0.083
23	6 33 15.46	2.6373	27 28 24.8	0.270
24	6 35 53.67	2.6363	N.27 28 3.0	0.457

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 9.			
	h m s	s	° ′ ″	″
0	6 35 53.67	2.6363	N.27 28 3.0	0.457
1	6 38 31.82	2.6353	27 27 30.0	0.643
2	6 41 9.90	2.6340	27 26 45.9	0.828
3	6 43 47.90	2.6326	27 25 50.6	1.014
4	6 46 25.81	2.6311	27 24 44.2	1.199
5	6 49 3.63	2.6294	27 23 26.7	1.384
6	6 51 41.34	2.6275	27 21 58.1	1.568
7	6 54 18.93	2.6255	27 20 18.5	1.753
8	6 56 56.40	2.6233	27 18 27.8	1.936
9	6 59 33.73	2.6211	27 16 26.2	2.119
10	7 2 10.93	2.6187	27 14 13.6	2.302
11	7 4 47.97	2.6160	27 11 50.0	2.483
12	7 7 24.85	2.6133	27 9 15.5	2.665
13	7 10 1.56	2.6104	27 6 30.2	2.845
14	7 12 38.10	2.6074	27 3 34.1	3.025
15	7 15 14.45	2.6043	27 0 27.2	3.204
16	7 17 50.61	2.6009	26 57 9.6	3.383
17	7 20 26.56	2.5974	26 53 41.3	3.560
18	7 23 2.30	2.5939	26 50 2.4	3.737
19	7 25 37.83	2.5902	26 46 12.9	3.913
20	7 28 13.13	2.5863	26 42 12.8	4.088
21	7 30 48.19	2.5824	26 38 2.3	4.263
22	7 33 23.02	2.5784	26 33 41.3	4.436
23	7 35 57.60	2.5742	N.26 29 10.0	4.608
	FRIDAY 10.			
0	7 38 31.92	2.5698	N.26 24 28.4	4.779
1	7 41 5.98	2.5653	26 19 36.5	4.949
2	7 43 39.76	2.5608	26 14 34.5	5.118
3	7 46 13.27	2.5562	26 9 22.3	5.287
4	7 48 46.50	2.5514	26 4 0.1	5.454
5	7 51 19.44	2.5465	25 58 27.8	5.621
6	7 53 52.08	2.5415	25 52 45.6	5.785
7	7 56 24.42	2.5364	25 46 53.6	5.948
8	7 58 56.45	2.5313	25 40 51.8	6.111
9	8 1 28.17	2.5260	25 34 40.3	6.273
10	8 3 59.57	2.5206	25 28 19.1	6.433
11	8 6 30.64	2.5151	25 21 48.4	6.591
12	8 9 1.38	2.5096	25 15 8.2	6.748
13	8 11 31.79	2.5040	25 8 18.6	6.904
14	8 14 1.86	2.4983	25 1 19.7	7.059
15	8 16 31.58	2.4925	24 54 11.5	7.213
16	8 19 0.96	2.4867	24 46 54.2	7.365
17	8 21 29.98	2.4807	24 39 27.8	7.516
18	8 23 58.64	2.4747	24 31 52.3	7.665
19	8 26 26.94	2.4687	24 24 7.9	7.813
20	8 28 54.88	2.4626	24 16 14.7	7.959
21	8 31 22.45	2.4564	24 8 12.8	8.104
22	8 33 49.65	2.4502	24 0 2.2	8.248
23	8 36 16.47	2.4438	23 51 43.0	8.390
24	8 38 42.91	2.4375	N.23 43 15.4	8.530

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 11.			
	h m s	s	° ′ ″	″
0	8 38 42.91	2.4375	N.23 43 15.4	8.530
1	8 41 8.97	2.4312	23 34 39.4	8.670
2	8 43 34.65	2.4248	23 25 55.0	8.808
3	8 45 59.94	2.4183	23 17 2.5	8.943
4	8 48 24.84	2.4118	23 8 1.8	9.078
5	8 50 49.35	2.4053	22 58 53.1	9.211
6	8 53 13.47	2.3988	22 49 36.5	9.343
7	8 55 37.20	2.3922	22 40 12.0	9.473
8	8 58 0.53	2.3855	22 30 39.8	9.601
9	9 0 23.46	2.3789	22 20 59.9	9.728
10	9 2 46.00	2.3723	22 11 12.5	9.853
11	9 5 8.13	2.3655	22 1 17.6	9.977
12	9 7 29.86	2.3588	21 51 15.3	10.098
13	9 9 51.19	2.3522	21 41 5.8	10.218
14	9 12 12.12	2.3454	21 30 49.1	10.338
15	9 14 32.64	2.3387	21 20 25.3	10.455
16	9 16 52.76	2.3319	21 9 54.5	10.571
17	9 19 12.47	2.3252	20 59 16.8	10.685
18	9 21 31.78	2.3185	20 48 32.3	10.797
19	9 23 50.69	2.3118	20 37 41.2	10.908
20	9 26 9.20	2.3051	20 26 43.4	11.018
21	9 28 27.30	2.2983	20 15 39.1	11.125
22	9 30 45.00	2.2917	20 4 28.4	11.231
23	9 33 2.30	2.2850	N.19 53 11.4	11.335
	SUNDAY 12.			
0	9 35 19.20	2.2783	N.19 41 48.2	11.438
1	9 37 35.70	2.2717	19 30 18.9	11.538
2	9 39 51.80	2.2650	19 18 43.6	11.638
3	9 42 7.50	2.2583	19 7 2.4	11.736
4	9 44 22.80	2.2518	18 55 15.3	11.833
5	9 46 37.71	2 2453	18 43 22.5	11.927
6	9 48 52.23	2.2387	18 31 24.1	12.020
7	9 51 6.35	2.2321	18 19 20.1	12.112
8	9 53 20.08	2.2256	18 7 10.7	12.201
9	9 55 33.42	2.2192	17 54 56.0	12.289
10	9 57 46.38	2.2128	17 42 36.0	12.377
11	9 59 58.95	2.2063	17 30 10.8	12.462
12	10 2 11.14	2.2000	17 17 40.6	12.545
13	10 4 22.95	2.1937	17 5 5.4	12.627
14	10 6 34.38	2.1874	16 52 25.4	12.707
15	10 8 45.44	2.1813	16 39 40.6	12.786
16	10 10 56.13	2.1750	16 26 51.1	12.863
17	10 13 6.44	2.1688	16 13 57.1	12.938
18	10 15 16.39	2.1628	16 0 58.6	13.012
19	10 17 25.97	2.1567	15 47 55.7	13.085
20	10 19 35.19	2.1507	15 34 48.4	13.156
21	10 21 44.05	2.1447	15 21 37.0	13.225
22	10 23 52.55	2.1388	15 8 21.4	13.293
23	10 26 0.71	2.1330	14 55 1.8	13.359
24	10 28 8.51	2.1272	N.14 41 38.3	13.424

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 13.			
	h m s	s	° ′ ″	″
0	10 28 8.51	2.1272	N. 14 41 38.3	13.424
1	10 30 15.97	2.1214	14 28 10.9	13.488
2	10 32 23.08	2.1157	14 14 39.8	13.549
3	10 34 29.85	2.1100	14 1 5.0	13.610
4	10 36 36.28	2.1044	13 47 26.6	13.668
5	10 38 42.38	2.0989	13 33 44.8	13.725
6	10 40 48.15	2.0935	13 19 59.6	13.781
7	10 42 53.60	2.0881	13 6 11.1	13.836
8	10 44 58.72	2.0827	12 52 19.3	13.889
9	10 47 3.52	2.0774	12 38 24.4	13.940
10	10 49 8.01	2.0723	12 24 26.5	13.990
11	10 51 12.19	2.0671	12 10 25.6	14.039
12	10 53 16.06	2.0619	11 56 21.8	14.086
13	10 55 19.62	2.0568	11 42 15.3	14.131
14	10 57 22.88	2.0519	11 28 6.1	14.176
15	10 59 25.85	2.0471	11 13 54.2	14.219
16	11 1 28.53	2.0422	10 59 39.8	14.261
17	11 3 30.91	2.0373	10 45 22.9	14.301
18	11 5 33.01	2.0327	10 31 3.7	14.339
19	11 7 34.83	2.0280	10 16 42.2	14.377
20	11 9 36.37	2.0234	10 2 18.5	14.413
21	11 11 37.64	2.0189	9 47 52.7	14.448
22	11 13 38.64	2.0144	9 33 24.8	14.482
23	11 15 39.37	2.0101	N. 9 18 54.9	14.513
	TUESDAY 14.			
0	11 17 39.85	2.0058	N. 9 4 23.2	14.543
1	11 19 40.07	2.0016	8 49 49.7	14.573
2	11 21 40.04	1.9974	8 35 14.5	14.602
3	11 23 39.76	1.9933	8 20 37.6	14.628
4	11 25 39.23	1.9892	8 5 59.1	14.653
5	11 27 38.46	1.9853	7 51 19.1	14.678
6	11 29 37.46	1.9814	7 36 37.7	14.701
7	11 31 36.23	1.9776	7 21 55.0	14.723
8	11 33 34.77	1.9738	7 7 11.0	14.743
9	11 35 33.09	1.9702	6 52 25.8	14.763
10	11 37 31.19	1.9665	6 37 39.5	14.780
11	11 39 29.07	1.9629	6 22 52.2	14.797
12	11 41 26.74	1.9595	6 8 3.9	14.813
13	11 43 24.21	1.9562	5 53 14.7	14.827
14	11 45 21.48	1.9528	5 38 24.7	14.840
15	11 47 18.55	1.9496	5 23 33.9	14.852
16	11 49 15.43	1.9464	5 8 42.5	14.863
17	11 51 12.12	1.9433	4 53 50.4	14.873
18	11 53 8.62	1.9403	4 38 57.8	14.881
19	11 55 4.95	1.9373	4 24 4.7	14.888
20	11 57 1.10	1.9344	4 9 11.2	14.894
21	11 58 57.08	1.9316	3 54 17.4	14.898
22	12 0 52.89	1.9288	3 39 23.4	14.902
23	12 2 48.53	1.9261	3 24 29.2	14.905
24	12 4 44.02	1.9236	N. 3 9 34.8	14.907

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 15.			
	h m s	s	° ′ ″	″
0	12 4 44.02	1.9236	N. 3 9 34.8	14.907
1	12 6 39.36	1.9211	2 54 40.4	14.907
2	12 8 34.55	1.9186	2 39 46.0	14.906
3	12 10 29.59	1.9162	2 24 51.7	14.904
4	12 12 24.49	1.9138	2 9 57.5	14.902
5	12 14 19.25	1.9116	1 55 3.5	14.898
6	12 16 13.88	1.9094	1 40 9.8	14.893
7	12 18 8.38	1.9073	1 25 16.4	14.887
8	12 20 2.76	1.9053	1 10 23.4	14.879
9	12 21 57.02	1.9033	0 55 30.9	14.871
10	12 23 51.16	1.9014	0 40 38.9	14.862
11	12 25 45.19	1.8996	0 25 47.5	14.851
12	12 27 39.11	1.8978	N. 0 10 56.8	14.839
13	12 29 32.93	1.8962	S. 0 3 53.2	14.827
14	12 31 26.65	1.8946	0 18 42.5	14.814
15	12 33 20.28	1.8930	0 33 30.9	14.800
16	12 35 13.81	1.8915	0 48 18.5	14.785
17	12 37 7.26	1.8902	1 3 5.1	14.768
18	12 39 0.63	1.8888	1 17 50.7	14.751
19	12 40 53.92	1.8876	1 32 35.2	14.732
20	12 42 47.14	1.8864	1 47 18.5	14.713
21	12 44 40.29	1.8853	2 2 0.7	14.693
22	12 46 33.37	1.8842	2 16 41.6	14.671
23	12 48 26.39	1.8832	S. 2 31 21.2	14.648
	THURSDAY 16.			
0	12 50 19.35	1.8823	S. 2 45 59.4	14.625
1	12 52 12.26	1.8814	3 0 36.2	14.602
2	12 54 5.12	1.8807	3 15 11.6	14.577
3	12 55 57.94	1.8799	3 29 45.4	14.550
4	12 57 50.71	1.8793	3 44 17.6	14.523
5	12 59 43.45	1.8788	3 58 48.2	14.495
6	13 1 36.16	1.8782	4 13 17.0	14.466
7	13 3 28.83	1.8777	4 27 44.1	14.437
8	13 5 21.48	1.8773	4 42 9.4	14.406
9	13 7 14.11	1.8770	4 56 32.8	14.374
10	13 9 6.72	1.8768	5 10 54.3	14.342
11	13 10 59.32	1.8766	5 25 13.8	14.308
12	13 12 51.91	1.8764	5 39 31.3	14.274
13	13 14 44.49	1.8764	5 53 46.7	14.239
14	13 16 37.08	1.8764	6 8 0.0	14.203
15	13 18 29.66	1.8764	6 22 11.0	14.165
16	13 20 22.25	1.8766	6 36 19.8	14.128
17	13 22 14.85	1.8768	6 50 26.4	14.090
18	13 24 7.47	1.8771	7 4 30.6	14.050
19	13 26 0.10	1.8773	7 18 32.4	14.010
20	13 27 52.75	1.8778	7 32 31.8	13.969
21	13 29 45.43	1.8782	7 46 28.7	13.926
22	13 31 38.13	1.8787	8 0 22.9	13.883
23	13 33 30.87	1.8793	8 14 14.6	13.840
24	13 35 23.64	1.8798	S. 8 28 3.7	13.796

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 17.			
	h m s	s	° ′ ″	″
0	13 35 23.64	1.8798	S. 8 28 3.7	13.796
1	13 37 16.45	1.8806	8 41 50.1	13.750
2	13 39 9.31	1.8813	8 55 33.7	13.703
3	13 41 2.21	1.8822	9 9 14.5	13.657
4	13 42 55.17	1.8831	9 22 52.5	13.609
5	13 44 48.18	1.8839	9 36 27.6	13.560
6	13 46 41.24	1.8848	9 49 59.7	13.510
7	13 48 34.36	1.8859	10 3 28.8	13.460
8	13 50 27.55	1.8871	10 16 54.9	13.409
9	13 52 20.81	1.8883	10 30 17.9	13.357
10	13 54 14.14	1.8894	10 43 37.7	13.304
11	13 56 7.54	1.8907	10 56 54.4	13.251
12	13 58 1.02	1.8920	11 10 7.8	13.196
13	13 59 54.58	1.8934	11 23 17.9	13.141
14	14 1 48.23	1.8949	11 36 24.7	13.085
15	14 3 41.97	1.8963	11 49 28.1	13.028
16	14 5 35.79	1.8978	12 2 28.1	12.971
17	14 7 29.71	1.8995	12 15 24.6	12.913
18	14 9 23.73	1.9012	12 28 17.6	12.853
19	14 11 17.85	1.9028	12 41 7.0	12.793
20	14 13 12.07	1.9046	12 53 52.8	12.733
21	14 15 6.40	1.9064	13 6 35.0	12.672
22	14 17 0.84	1.9083	13 19 13.4	12.609
23	14 18 55.39	1.9102	S. 13 31 48.1	12.547
	SATURDAY 18.			
0	14 20 50.06	1.9122	S. 13 44 19.0	12.483
1	14 22 44.85	1.9142	13 56 46.0	12.418
2	14 24 39.76	1.9163	14 9 9.1	12.353
3	14 26 34.80	1.9183	14 21 28.3	12.287
4	14 28 29.96	1.9204	14 33 43.5	12.220
5	14 30 25.25	1.9227	14 45 54.7	12.153
6	14 32 20.68	1.9249	14 58 1.8	12.084
7	14 34 16.24	1.9272	15 10 4.8	12.015
8	14 36 11.94	1.9296	15 22 3.6	11.945
9	14 38 7.79	1.9320	15 33 58.2	11.875
10	14 40 3.78	1.9344	15 45 48.6	11.803
11	14 41 59.92	1.9368	15 57 34.6	11.731
12	14 43 56.20	1.9393	16 9 16.3	11.658
13	14 45 52.64	1.9419	16 20 53.6	11.585
14	14 47 49.23	1.9445	16 32 26.5	11.511
15	14 49 45.98	1.9472	16 43 54.9	11.435
16	14 51 42.89	1.9498	16 55 18.7	11.359
17	14 53 39.96	1.9525	17 6 38.0	11.283
18	14 55 37.19	1.9553	17 17 52.7	11.206
19	14 57 34.59	1.9581	17 29 2.7	11.128
20	14 59 32.16	1.9609	17 40 8.0	11.048
21	15 1 29.90	1.9638	17 51 8.5	10.969
22	15 3 27.81	1.9667	18 2 4.3	10.889
23	15 5 25.90	1.9696	18 12 55.2	10.808
24	15 7 24.16	1.9725	S. 18 23 41.2	10.726

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 19.			
	h m s	s	° ′ ″	″
0	15 7 24.16	1.9725	S. 18 23 41.2	10.726
1	15 9 22.60	1.9755	18 34 22.3	10.643
2	15 11 21.22	1.9786	18 44 58.4	10.561
3	15 13 20.03	1.9817	18 55 29.6	10.478
4	15 15 19.02	1.9848	19 5 55.7	10.393
5	15 17 18.20	1.9878	19 16 16.7	10.307
6	15 19 17.56	1.9909	19 26 32.5	10.221
7	15 21 17.11	1.9941	19 36 43.2	10.134
8	15 23 16.85	1.9973	19 46 48.6	10.046
9	15 25 16.79	2.0006	19 56 48.7	9.958
10	15 27 16.92	2.0038	20 6 43.5	9.869
11	15 29 17.25	2.0071	20 16 33.0	9.780
12	15 31 17.77	2.0103	20 26 17.1	9.689
13	15 33 18.49	2.0137	20 35 55.7	9.598
14	15 35 19.41	2.0171	20 45 28.8	9.506
15	15 37 20.54	2.0204	20 54 56.4	9.413
16	15 39 21.86	2.0238	21 4 18.4	9.320
17	15 41 23.39	2.0272	21 13 34.8	9.226
18	15 43 25.12	2.0306	21 22 45.5	9.131
19	15 45 27.06	2.0340	21 31 50.5	9.036
20	15 47 29.20	2.0374	21 40 49.8	8.940
21	15 49 31.55	2.0409	21 49 43.3	8.843
22	15 51 34.11	2.0444	21 58 31.0	8.746
23	15 53 36.88	2.0478	S. 22 7 12.8	8.648
	MONDAY 20.			
0	15 55 39.85	2.0513	S. 22 15 48.7	8.548
1	15 57 43.03	2.0548	22 24 18.6	8.448
2	15 59 46.43	2.0583	22 32 42.5	8.348
3	16 1 50.03	2.0618	22 41 0.4	8.248
4	16 3 53.85	2.0654	22 49 12.2	8.146
5	16 5 57.88	2.0689	22 57 17.9	8.043
6	16 8 2.12	2.0724	23 5 17.4	7.940
7	16 10 6.57	2.0759	23 13 10.7	7.837
8	16 12 11.23	2.0794	23 20 57.8	7.733
9	16 14 16.10	2.0830	23 28 38.6	7.627
10	16 16 21.19	2.0866	23 36 13.0	7.521
11	16 18 26.49	2.0901	23 43 41.1	7.415
12	16 20 32.00	2.0936	23 51 2.8	7.308
13	16 22 37.72	2.0971	23 58 18.0	7.200
14	16 24 43.65	2.1006	24 5 26.8	7.092
15	16 26 49.79	2.1041	24 12 29.0	6.983
16	16 28 56.14	2.1076	24 19 24.7	6.873
17	16 31 2.70	2.1110	24 26 13.7	6.762
18	16 33 9.46	2.1144	24 32 56.1	6.652
19	16 35 16.43	2.1179	24 39 31.9	6.540
20	16 37 23.61	2.1214	24 46 0.9	6.428
21	16 39 31.00	2.1248	24 52 23.2	6.315
22	16 41 38.59	2.1282	24 58 38.7	6.201
23	16 43 46.38	2.1316	25 4 47.3	6.087
24	16 45 54.38	2.1350	S. 25 10 49.1	5.973

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 21.			
	h m s	s	° ′ ″	″
0	16 45 54.38	2.1350	S. 25 10 49.1	5.973
1	16 48 2.58	2.1383	25 16 44.0	5.857
2	16 50 10.98	2.1417	25 22 31.9	5.740
3	16 52 19.58	2.1449	25 28 12.8	5.623
4	16 54 28.37	2.1482	25 33 46.7	5.506
5	16 56 37.36	2.1514	25 39 13.5	5.388
6	16 58 46.54	2.1547	25 44 33.3	5.271
7	17 0 55.92	2.1579	25 49 46.0	5.152
8	17 3 5.49	2.1611	25 54 51.5	5.032
9	17 5 15.25	2.1642	25 59 49.8	4.912
10	17 7 25.19	2.1673	26 4 40.9	4.791
11	17 9 35.32	2.1703	26 9 24.7	4.669
12	17 11 45.63	2.1734	26 14 1.2	4.548
13	17 13 56.13	2.1764	26 18 30.4	4.425
14	17 16 6.80	2.1793	26 22 52.2	4.303
15	17 18 17.65	2.1823	26 27 6.7	4.179
16	17 20 28.67	2.1852	26 31 13.7	4.055
17	17 22 39.87	2.1881	26 35 13.3	3.930
18	17 24 51.24	2.1908	26 39 5.3	3.805
19	17 27 2.77	2.1936	26 42 49.9	3.680
20	17 29 14.47	2.1963	26 46 26.9	3.553
21	17 31 26.33	2.1990	26 49 56.3	3.427
22	17 33 38.35	2.2016	26 53 18.1	3.300
23	17 35 50.52	2.2042	S. 26 56 32.3	3.173
	WEDNESDAY 22.			
0	17 38 2.85	2.2068	S. 26 59 38.8	3.044
1	17 40 15.33	2.2093	27 2 37.6	2.916
2	17 42 27.96	2.2117	27 5 28.7	2.788
3	17 44 40.73	2.2141	27 8 12.1	2.658
4	17 46 53.65	2.2164	27 10 47.7	2.528
5	17 49 6.70	2.2187	27 13 15.5	2.398
6	17 51 19.89	2.2209	27 15 35.5	2.268
7	17 53 33.21	2.2231	27 17 47.6	2.137
8	17 55 46.66	2.2252	27 19 51.9	2.006
9	17 58 0.23	2.2273	27 21 48.3	1.874
10	18 0 13.93	2.2293	27 23 36.8	1.742
11	18 2 27.74	2.2312	27 25 17.3	1.609
12	18 4 41.67	2.2331	27 26 49.9	1.477
13	18 6 55.71	2.2349	27 28 14.5	1.343
14	18 9 9.86	2.2367	27 29 31.1	1.210
15	18 11 24.11	2.2384	27 30 39.7	1.077
16	18 13 38.47	2.2401	27 31 40.3	0.943
17	18 15 52.92	2.2416	27 32 32.8	0.808
18	18 18 7.46	2.2431	27 33 17.2	0.673
19	18 20 22.09	2.2446	27 33 53.6	0.539
20	18 22 36.81	2.2460	27 34 21.9	0.403
21	18 24 51.61	2.2473	27 34 42.0	0.268
22	18 27 6.49	2.2486	27 34 54.0	−0.133
23	18 29 21.44	2.2498	27 34 57.9	+0.003
24	18 31 36.46	2.2509	S. 27 34 53.6	0.140

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 23.			
	h m s	s	° ′ ″	″
0	18 31 36.46	2.2509	S. 27 34 53.6	0.140
1	18 33 51.55	2.2520	27 34 41.1	0.276
2	18 36 6.70	2.2530	27 34 20.5	0.412
3	18 38 21.91	2.2539	27 33 51.7	0.549
4	18 40 37.17	2.2548	27 33 14.6	0.687
5	18 42 52.48	2.2556	27 32 29.3	0.823
6	18 45 7.84	2.2563	27 31 35.8	0.960
7	18 47 23.24	2.2570	27 30 34.1	1.097
8	18 49 38.68	2.2576	27 29 24.2	1.234
9	18 51 54.15	2.2582	27 28 6.0	1.373
10	18 54 9.66	2.2587	27 26 39.5	1.510
11	18 56 25.19	2.2590	27 25 4.8	1.647
12	18 58 40.74	2.2593	27 23 21.9	1.784
13	19 0 56.31	2.2597	27 21 30.7	1.923
14	19 3 11.90	2.2599	27 19 31.2	2.061
15	19 5 27.50	2.2600	27 17 23.4	2.199
16	19 7 43.10	2.2600	27 15 7.3	2.337
17	19 9 58.70	2.2601	27 12 43.0	2.474
18	19 12 14.31	2.2601	27 10 10.4	2.612
19	19 14 29.91	2.2599	27 7 29.6	2.749
20	19 16 45.50	2.2598	27 4 40.5	2.888
21	19 19 1.08	2.2595	27 1 43.1	3.025
22	19 21 16.64	2.2592	26 58 37.5	3.163
23	19 23 32.18	2.2588	S. 26 55 23.6	3.301
	FRIDAY 24.			
0	19 25 47.69	2.2583	S. 26 52 1.4	3.438
1	19 28 3.18	2.2578	26 48 31.0	3.575
2	19 30 18.63	2.2573	26 44 52.4	3.713
3	19 32 34.05	2.2567	26 41 5.5	3.850
4	19 34 49.43	2.2560	26 37 10.4	3.987
5	19 37 4.77	2.2553	26 33 7.1	4.123
6	19 39 20.06	2.2544	26 28 55.6	4.260
7	19 41 35.30	2.2536	26 24 35.9	4.397
8	19 43 50.49	2.2527	26 20 8.0	4.533
9	19 46 5.62	2.2518	26 15 32.0	4.668
10	19 48 20.70	2.2508	26 10 47.8	4.805
11	19 50 35.71	2.2496	26 5 55.4	4.941
12	19 52 50.65	2.2485	26 0 54.9	5.076
13	19 55 5.53	2.2473	25 55 46.3	5.211
14	19 57 20.33	2.2460	25 50 29.6	5.346
15	19 59 35.05	2.2448	25 45 4.8	5.480
16	20 1 49.70	2.2434	25 39 32.0	5.614
17	20 4 4.26	2.2420	25 33 51.1	5.748
18	20 6 18.74	2.2406	25 28 2.2	5.882
19	20 8 33.13	2.2391	25 22 5.3	6.015
20	20 10 47.43	2.2376	25 16 0.4	6.148
21	20 13 1.64	2.2360	25 9 47.5	6.281
22	20 15 15.75	2.2343	25 3 26.7	6.413
23	20 17 29.76	2.2328	24 56 58.0	6.544
24	20 19 43.68	2.2311	S. 24 50 21.4	6.676

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 25.			
	h m s	s	° ′ ″	″
0	20 19 43.68	2.2311	S. 24 50 21.4	6.676
1	20 21 57.49	2.2293	24 43 36.9	6.807
2	20 24 11.20	2.2276	24 36 44.6	6.938
3	20 26 24.80	2.2258	24 29 44.4	7.068
4	20 28 38.29	2.2239	24 22 36.4	7.198
5	20 30 51.67	2.2220	24 15 20.7	7.327
6	20 33 4.93	2.2201	24 7 57.2	7.435
7	20 35 18.08	2.2182	24 0 26.1	7.583
8	20 37 31.11	2.2163	23 52 47.2	7.711
9	20 39 44.03	2.2143	23 45 0.7	7.838
10	20 41 56.82	2.2122	23 37 6.6	7.965
11	20 44 9.49	2.2101	23 29 4.9	8.092
12	20 46 22.03	2.2080	23 20 55.6	8.218
13	20 48 34.45	2.2059	23 12 38.8	8.343
14	20 50 46.74	2.2038	23 4 14.5	8.467
15	20 52 58.90	2.2017	22 55 42.8	8.591
16	20 55 10.94	2.1995	22 47 3.6	8.715
17	20 57 22.84	2.1973	22 38 17.0	8.838
18	20 59 34.61	2.1951	22 29 23.1	8.959
19	21 1 46.25	2.1928	22 20 21.9	9.081
20	21 3 57.75	2.1906	22 11 13.4	9.203
21	21 6 9.12	2.1884	22 1 57.6	9.323
22	21 8 20.36	2.1862	21 52 34.6	9.443
23	21 10 31.46	2.1838	S. 21 43 4.5	9.562
	SUNDAY 26.			
0	21 12 42.42	2.1816	S. 21 33 27.2	9.680
1	21 14 53.25	2.1793	21 23 42.9	9.798
2	21 17 3.94	2.1770	21 13 51.5	9.915
3	21 19 14.49	2.1747	21 3 53.1	10.032
4	21 21 24.90	2.1724	20 53 47.7	10.148
5	21 23 35.18	2.1702	20 43 35.4	10.262
6	21 25 45.32	2.1678	20 33 16.3	10.376
7	21 27 55.32	2.1655	20 22 50.3	10.490
8	21 30 5.18	2.1633	20 12 17.5	10.603
9	21 32 14.91	2.1610	20 1 38.0	10.714
10	21 34 24.50	2.1587	19 50 51.8	10.825
11	21 36 33.95	2.1564	19 39 59.0	10.935
12	21 38 43.27	2.1542	19 28 59.6	11.045
13	21 40 52.45	2.1518	19 17 53.6	11.153
14	21 43 1.49	2.1496	19 6 41.2	11.261
15	21 45 10.40	2.1474	18 55 22.3	11.368
16	21 47 19.18	2.1452	18 43 57.0	11.475
17	21 49 27.82	2.1429	18 32 25.3	11.581
18	21 51 36.33	2.1408	18 20 47.3	11.686
19	21 53 44.71	2.1386	18 9 3.0	11.789
20	21 55 52.96	2.1364	17 57 12.6	11.892
21	21 58 1.08	2.1343	17 45 16.0	11.994
22	22 0 9.07	2.1321	17 33 13.3	12.096
23	22 2 16.93	2.1300	17 21 4.5	12.196
24	22 4 24.67	2.1280	S. 17 8 49.8	12.295

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 27.			
	h m s	s	° ′ ″	″
0	22 4 24.67	2.1280	S. 17 8 49.8	12.295
1	22 6 32.29	2.1259	16 56 29.1	12.393
2	22 8 39.78	2.1239	16 44 2.6	12.491
3	22 10 47.16	2.1220	16 31 30.2	12.588
4	22 12 54.42	2.1200	16 18 52.1	12.683
5	22 15 1.56	2.1180	16 6 8.2	12.778
6	22 17 8.58	2.1161	15 53 18.7	12.872
7	22 19 15.49	2.1143	15 40 23.6	12.965
8	22 21 22.29	2.1124	15 27 22.9	13.057
9	22 23 28.98	2.1106	15 14 16.8	13.148
10	22 25 35.56	2.1088	15 1 5.2	13.238
11	22 27 42.03	2.1070	14 47 48.3	13.327
12	22 29 48.40	2.1053	14 34 26.0	13.415
13	22 31 54.67	2.1037	14 20 58.5	13.501
14	22 34 0.84	2.1020	14 7 25.9	13.587
15	22 36 6.91	2.1004	13 53 48.1	13.672
16	22 38 12.89	2.0988	13 40 5.3	13.755
17	22 40 18.77	2.0973	13 26 17.5	13.838
18	22 42 24.57	2.0959	13 12 24.7	13.920
19	22 44 30.28	2.0945	12 58 27.1	14.000
20	22 46 35.91	2.0932	12 44 24.7	14.080
21	22 48 41.46	2.0918	12 30 17.5	14.158
22	22 50 46.93	2.0905	12 16 5.7	14.235
23	22 52 52.32	2.0893	S. 12 1 49.3	14.312
	TUESDAY 28.			
0	22 54 57.64	2.0881	S. 11 47 28.3	14.387
1	22 57 2.89	2.0870	11 33 2.9	14.460
2	22 59 8.08	2.0859	11 18 33.1	14.533
3	23 1 13.20	2.0848	11 3 58.9	14.605
4	23 3 18.26	2.0838	10 49 20.5	14.675
5	23 5 23.26	2.0829	10 34 37.9	14.745
6	23 7 28.21	2.0820	10 19 51.1	14.813
7	23 9 33.10	2.0812	10 5 0.3	14.879
8	23 11 37.95	2.0805	9 50 5.6	14.945
9	23 13 42.76	2.0798	9 35 6.9	15.010
10	23 15 47.52	2.0791	9 20 4.4	15.073
11	23 17 52.25	2.0785	9 4 58.1	15.136
12	23 19 56.94	2.0779	8 49 48.1	15.197
13	23 22 1.60	2.0775	8 34 34.5	15.256
14	23 24 6.24	2.0771	8 19 17.4	15.314
15	23 26 10.85	2.0767	8 3 56.8	15.372
16	23 28 15.44	2.0763	7 48 32.8	15.428
17	23 30 20.01	2.0761	7 33 5.5	15.482
18	23 32 24.57	2.0759	7 17 35.0	15.535
19	23 34 29.12	2.0758	7 2 1.3	15.588
20	23 36 33.67	2.0758	6 46 24.5	15.638
21	23 38 38.22	2.0758	6 30 44.7	15.688
22	23 40 42.77	2.0758	6 15 2.0	15.736
23	23 42 47.32	2.0760	5 59 16.4	15.783
24	23 44 51.89	2.0763	S. 5 43 28.1	15.828

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 29.			
	h m s	s	° ′ ″	″
0	23 44 51.89	2.0763	S. 5 43 28.1	15.828
1	23 46 56.47	2.0765	5 27 37.1	15.872
2	23 49 1.07	2.0768	5 11 43.5	15.914
3	23 51 5.69	2.0772	4 55 47.4	15.956
4	23 53 10.33	2.0777	4 39 48.8	15.996
5	23 55 15.01	2.0782	4 23 47.9	16.034
6	23 57 19.72	2.0788	4 7 44.7	16.072
7	23 59 24.47	2.0796	3 51 39.3	16.108
8	0 1 29.27	2.0803	3 35 31.8	16.142
9	0 3 34.11	2.0811	3 19 22.3	16.174
10	0 5 39.00	2.0820	3 3 10.9	16.206
11	0 7 43.95	2.0830	2 46 57.6	16.236
12	0 9 48.96	2.0840	2 30 42.6	16.264
13	0 11 54.03	2.0851	2 14 25.9	16.292
14	0 13 59.17	2.0863	1 58 7.6	16.317
15	0 16 4.39	2.0876	1 41 47.9	16.340
16	0 18 9.68	2.0888	1 25 26.8	16.363
17	0 20 15.05	2.0902	1 9 4.3	16.385
18	0 22 20.51	2.0918	0 52 40.6	16.404
19	0 24 26.06	2.0933	0 36 15.8	16.423
20	0 26 31.70	2.0948	0 19 49.9	16.439
21	0 28 37.44	2.0966	S. 0 3 23.1	16.453
22	0 30 43.29	2.0983	N. 0 13 4.5	16.467
23	0 32 49.24	2.1002	N. 0 29 33.0	16.480
	THURSDAY 30.			
0	0 34 55.31	2.1021	N. 0 46 2.1	16.490
1	0 37 1.49	2.1041	1 2 31.8	16.499
2	0 39 7.80	2.1062	1 19 2.0	16.506
3	0 41 14.23	2.1083	1 35 32.5	16.511
4	0 43 20.79	2.1105	1 52 3.3	16.515
5	0 45 27.49	2.1128	2 8 34.3	16.518
6	0 47 34.32	2.1151	2 25 5.4	16.519
7	0 49 41.30	2.1175	2 41 36.6	16.518
8	0 51 48.42	2.1200	2 58 7.6	16.515
9	0 53 55.70	2.1227	3 14 38.4	16.511
10	0 56 3.14	2.1253	3 31 8.9	16.506
11	0 58 10.74	2.1280	3 47 39.1	16.498
12	1 0 18.50	2.1308	4 4 8.7	16.488
13	1 2 26.44	2.1338	4 20 37.7	16.478
14	1 4 34.55	2.1367	4 37 6.0	16.466
15	1 6 42.84	2.1397	4 53 33.6	16.452
16	1 8 51.31	2.1428	5 10 0.2	16.435
17	1 10 59.97	2.1460	5 26 25.8	16.418
18	1 13 8.83	2.1493	5 42 50.3	16.398
19	1 15 17.88	2.1526	5 59 13.6	16.377
20	1 17 27.14	2.1560	6 15 35.6	16.354
21	1 19 36.60	2.1594	6 31 56.1	16.329
22	1 21 46.27	2.1630	6 48 15.1	16.303
23	1 23 56.16	2.1667	7 4 32.5	16.276
24	1 26 6.27	2.1703	N. 7 20 48.2	16.246

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute
	FRIDAY 31.			
	h m s	s	° ′ ″	″
0	1 26 6.27	2.1703	N. 7 20 48.2	16.246
1	1 28 16.60	2.1741	7 37 2.0	16.214
2	1 30 27.16	2.1779	7 53 13.9	16.181
3	1 32 37.95	2.1818	8 9 23.7	16.145
4	1 34 48.98	2.1858	8 25 31.3	16.108
5	1 37 0.25	2.1898	8 41 36.7	16.070
6	1 39 11.76	2.1939	8 57 39.7	16.028
7	1 41 23.52	2.1981	9 13 40.1	15.986
8	1 43 35.53	2.2023	9 29 38.0	15.942
9	1 45 47.80	2.2067	9 45 33.2	15.896
10	1 48 0.33	2.2111	10 1 25.5	15.848
11	1 50 13.13	2.2155	10 17 14.9	15.798
12	1 52 26.19	2.2200	10 33 1.3	15.747
13	1 54 39.53	2.2246	10 48 44.5	15.693
14	1 56 53.14	2.2292	11 4 24.5	15.638
15	1 59 7.03	2.2339	11 20 1.1	15.582
16	2 1 21.21	2.2387	11 35 34.3	15.523
17	2 3 35.67	2.2434	11 51 3.8	15.461
18	2 5 50.42	2.2483	12 6 29.6	15.398
19	2 8 5.47	2.2533	12 21 51.6	15.334
20	2 10 20.82	2.2583	12 37 9.7	15.268
21	2 12 36.46	2.2633	12 52 23.7	15.199
22	2 14 52.41	2.2684	13 7 33.6	15.129
23	2 17 8.67	2.2736	N. 13 22 39.2	15.058
	SATURDAY, APRIL 1.			
0	2 19 25.24	2.2788	N. 13 37 40.5	14.984

PHASES OF THE MOON.

		d	h	m
☽	First Quarter . . . Mar.	7	11	1.5
○	Full Moon	14	11	58.5
☾	Last Quarter	22	12	26.4
●	New Moon	30	0	37.8

		d	h
☾	Perigee . . . . . Mar.	6	4.5
☾	Apogee	21	1.1

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
2	Sun	W.	19 1 31	2837	20 35 11	2813	22 9 22	2792	23 44 1	2773
	Aldebaran	E.	68 48 33	2436	67 5 50	2431	65 22 59	2425	63 40 0	2420
	Pollux	E.	112 41 30	2394	110 57 46	2386	109 13 51	2378	107 29 45	2371
3	Sun	W.	31 42 28	2708	33 18 57	2698	34 55 39	2689	36 32 33	2682
	Aldebaran	E.	55 3 20	2400	53 19 44	2398	51 36 5	2396	49 52 24	2395
	Pollux	E.	98 46 52	2341	97 1 52	2336	95 16 44	2331	93 31 29	2326
4	Sun	W.	44 39 22	2652	46 17 7	2647	47 54 58	2643	49 32 55	2639
	Aldebaran	E.	41 13 58	2402	39 30 26	2406	37 47 0	2412	36 3 43	2421
	Pollux	E.	84 43 44	2308	82 57 56	2305	81 12 3	2302	79 26 7	2300
	Regulus	E.	121 9 14	2322	119 23 47	2320	117 38 16	2317	115 52 40	2314
5	Sun	W.	57 43 45	2626	59 22 5	2624	61 0 27	2622	62 38 52	2621
	Pollux	E.	70 35 41	2292	68 49 29	2291	67 3 16	2290	65 17 2	2289
	Regulus	E.	107 3 45	2303	105 17 49	2302	103 31 53	2301	101 45 55	2300
6	Sun	W.	70 51 12	2619	72 29 41	2619	74 8 9	2619	75 46 38	2619
	Venus	W.	47 10 13	2687	48 47 10	2687	50 24 8	2687	52 1 5	2688
	Saturn	W.	22 47 49	2326	24 33 11	2326	26 18 33	2325	28 3 56	2325
	Pollux	E.	56 25 45	2290	54 39 31	2290	52 53 17	2291	51 7 4	2292
	Regulus	E.	92 55 53	2300	91 9 53	2300	89 23 53	2301	87 37 54	2302
7	Sun	W.	83 58 49	2625	85 37 10	2626	87 15 30	2628	88 53 47	2630
	Venus	W.	60 5 33	2693	61 42 22	2695	63 19 9	2696	64 55 54	2698
	Saturn	W.	36 50 42	2329	38 35 59	2330	40 21 15	2331	42 6 29	2333
	α Arietis	W.	33 59 22	2521	35 40 6	2505	37 21 13	2490	39 2 40	2477
	Pollux	E.	42 16 27	2299	40 30 26	2301	38 44 28	2303	36 58 33	2305
	Regulus	E.	78 48 21	2307	77 2 32	2309	75 16 46	2311	73 31 3	2313
8	Sun	W.	97 4 33	2640	98 42 33	2643	100 20 30	2646	101 58 23	2649
	Venus	W.	72 59 0	2709	74 35 28	2712	76 11 52	2714	77 48 13	2716
	Saturn	W.	50 52 0	2343	52 36 57	2345	54 21 51	2348	56 6 41	2350
	α Arietis	W.	47 33 32	2439	49 16 11	2435	50 58 56	2431	52 41 46	2428
	Pollux	E.	28 9 53	2320	26 24 23	2324	24 38 58	2328	22 53 39	2333
	Regulus	E.	64 43 14	2325	62 57 51	2328	61 12 32	2331	59 27 18	2335
	Spica	E.	118 46 18	2321	117 0 49	2323	115 15 22	2325	113 29 59	2327
9	Sun	W.	110 6 46	2665	111 44 13	2669	113 21 35	2672	114 58 52	2676
	Venus	W.	85 49 3	2732	87 25 0	2736	89 0 52	2740	90 36 39	2743
	Saturn	W.	64 49 53	2365	66 34 18	2368	68 18 39	2371	70 2 55	2375
	α Arietis	W.	61 16 40	2424	62 59 41	2424	64 42 42	2425	66 25 42	2426
	Aldebaran	W.	30 58 1	2479	32 39 44	2469	34 21 41	2461	36 3 49	2455
	Regulus	E.	50 42 24	2353	48 57 42	2358	47 13 7	2363	45 28 39	2368
	Spica	E.	104 43 58	2341	102 58 58	2344	101 14 3	2347	99 29 12	2350
10	Venus	W.	98 34 18	2765	100 9 32	2769	101 44 40	2774	103 19 42	2779
	Saturn	W.	78 42 52	2395	80 26 34	2400	82 10 9	2404	83 53 38	2409
	α Arietis	W.	75 0 4	2437	76 42 46	2441	78 25 22	2444	80 7 54	2448
	Aldebaran	W.	44 36 7	2441	46 18 43	2441	48 1 20	2441	49 43 56	2442
	Regulus	E.	36 48 17	2399	35 4 41	2407	33 21 16	2415	31 38 3	2424
	Spica	E.	90 46 17	2370	89 1 59	2375	87 17 48	2379	85 33 43	2384

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
2	Sun	W.	25 19 4	2756	26 54 29	2742	28 30 13	2730	30 6 13	2719
	Aldebaran	E.	61 56 53	2415	60 13 39	2410	58 30 18	2406	56 46 51	2403
	Pollux	E.	105 45 29	2364	104 1 3	2358	102 16 28	2352	100 31 44	2346
3	Sun	W.	38 9 37	2675	39 46 51	2668	41 24 13	2662	43 1 44	2657
	Aldebaran	E.	48 8 41	2394	46 24 57	2395	44 41 15	2396	42 57 35	2398
	Pollux	E.	91 46 8	2322	90 0 40	2318	88 15 7	2314	86 29 28	2311
4	Sun	W.	51 10 57	2635	52 49 3	2632	54 27 14	2630	56 5 28	2628
	Aldebaran	E.	34 20 38	2431	32 37 47	2442	30 55 12	2456	29 12 57	2472
	Pollux	E.	77 40 7	2298	75 54 4	2296	74 7 59	2294	72 21 51	2293
	Regulus	E.	114 7 0	2311	112 21 16	2309	110 35 29	2306	108 49 38	2304
5	Sun	W.	64 17 18	2620	65 55 46	2620	67 34 14	2619	69 12 43	2619
	Pollux	E.	63 30 47	2289	61 44 32	2289	59 58 16	2289	58 12 0	2289
	Regulus	E.	99 59 56	2300	98 13 56	2299	96 27 55	2299	94 41 54	2299
6	Sun	W.	77 25 6	2621	79 3 33	2622	80 42 0	2623	82 20 25	2624
	Venus	W.	53 38 1	2689	55 14 56	2690	56 51 50	2691	58 28 42	2692
	Saturn	W.	29 49 19	2326	31 34 41	2326	33 20 3	2327	35 5 23	2328
	Pollux	E.	49 20 53	2293	47 34 44	2294	45 48 36	2296	44 2 30	2298
	Regulus	E.	85 51 57	2302	84 6 1	2303	82 20 6	2304	80 34 13	2305
7	Sun	W.	90 32 1	2632	92 10 13	2633	93 48 23	2635	95 26 30	2638
	Venus	W.	66 32 37	2700	68 9 17	2702	69 45 54	2704	71 22 29	2707
	Saturn	W.	43 51 41	2335	45 36 50	2337	47 21 56	2339	49 6 59	2341
	α Arietis	W.	40 44 25	2467	42 26 25	2458	44 8 37	2450	45 51 0	2444
	Pollux	E.	35 12 41	2308	33 26 53	2310	31 41 8	2313	29 55 28	2317
	Regulus	E.	71 45 23	2315	69 59 46	2317	68 14 12	2320	66 28 41	2322
8	Sun	W.	103 36 12	2652	105 13 57	2655	106 51 38	2658	108 29 14	2661
	Venus	W.	79 24 31	2719	81 0 45	2722	82 36 55	2725	84 13 1	2729
	Saturn	W.	57 51 28	2353	59 36 11	2356	61 20 49	2359	63 5 23	2362
	α Arietis	W.	54 24 41	2426	56 7 39	2425	57 50 38	2424	59 33 39	2424
	Pollux	E.	21 8 28	2339	19 23 25	2345	17 38 31	2353	15 53 48	2362
	Regulus	E.	57 42 9	2338	55 57 5	2342	54 12 6	2345	52 27 12	2349
	Spica	E.	111 44 39	2330	109 59 23	2332	108 14 10	2335	106 29 2	2338
9	Sun	W.	116 36 4	2681	118 13 10	2685	119 50 10	2690	121 27 4	2695
	Venus	W.	92 12 22	2747	93 47 59	2751	95 23 31	2756	96 58 57	2760
	Saturn	W.	71 47 5	2379	73 31 10	2383	75 15 10	2387	76 59 4	2391
	α Arietis	W.	68 8 40	2427	69 51 36	2429	71 34 29	2432	73 17 18	2434
	Aldebaran	W.	37 46 5	2450	39 28 29	2446	41 10 58	2443	42 53 31	2441
	Regulus	E.	43 44 18	2373	42 0 5	2379	40 16 0	2385	38 32 4	2392
	Spica	E.	97 44 26	2354	95 59 45	2358	94 15 10	2362	92 30 41	2366
10	Venus	W.	104 54 37	2785	106 29 25	2790	108 4 6	2796	109 38 39	2801
	Saturn	W.	85 37 0	2414	87 20 15	2419	89 3 23	2424	90 46 24	2429
	α Arietis	W.	81 50 21	2452	83 32 42	2457	85 14 56	2462	86 57 3	2467
	Aldebaran	W.	51 26 31	2444	53 9 3	2446	54 51 32	2449	56 33 57	2452
	Regulus	E.	29 55 3	2435	28 12 18	2447	26 29 50	2460	24 47 40	2474
	Spica	E.	83 49 45	2389	82 5 54	2394	80 22 10	2399	78 38 34	2405

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
10	JUPITER	E.	112 12 35	2354	110 27 54	2358	108 43 19	2363	106 58 51	2367
11	SATURN	W.	92 29 17	2435	94 12 2	2441	95 54 39	2447	97 37 7	2453
	α Arietis	W.	88 39 3	2472	90 20 55	2477	92 2 40	2483	93 44 16	2490
	Aldebaran	W.	58 16 18	2455	59 58 34	2459	61 40 45	2463	63 22 50	2468
	Pollux	W.	13 57 39	2435	15 40 24	2435	17 23 9	2436	19 5 53	2438
	Spica	E.	76 55 6	2410	75 11 46	2416	73 28 34	2422	71 45 31	2428
	JUPITER	E.	98 18 11	2392	96 34 25	2398	94 50 47	2404	93 7 17	2410
	Antares	E.	122 48 23	2405	121 4 56	2410	119 21 36	2416	117 38 24	2422
12	SATURN	W.	106 7 10	2487	107 48 42	2494	109 30 3	2502	111 11 14	2510
	α Arietis	W.	102 9 54	2527	103 50 30	2535	105 30 54	2543	107 11 7	2552
	Aldebaran	W.	71 51 27	2496	73 32 46	2502	75 13 56	2509	76 54 56	2516
	Pollux	W.	27 38 18	2462	29 20 25	2468	31 2 23	2475	32 44 12	2482
	Spica	E.	63 12 33	2463	61 30 28	2470	59 48 33	2478	58 6 49	2486
	JUPITER	E.	84 32 1	2442	82 49 26	2450	81 7 2	2457	79 24 48	2464
	Antares	E.	109 4 40	2455	107 22 23	2462	105 40 17	2470	103 58 21	2477
13	Aldebaran	W.	85 17 24	2556	86 57 20	2565	88 37 3	2574	90 16 34	2583
	Pollux	W.	41 10 45	2520	42 51 30	2529	44 32 3	2538	46 12 24	2547
	Spica	E.	49 41 9	2531	48 0 39	2541	46 20 22	2551	44 40 19	2561
	JUPITER	E.	70 56 21	2505	69 15 14	2514	67 34 20	2523	65 53 38	2532
	Antares	E.	95 31 28	2518	93 50 40	2527	92 10 5	2536	90 29 42	2545
14	Aldebaran	W.	98 30 54	2633	100 9 4	2644	101 47 0	2655	103 24 41	2666
	Pollux	W.	54 30 59	2594	56 10 2	2604	57 48 51	2615	59 27 26	2626
	Regulus	W.	18 28 31	2711	20 4 56	2706	21 41 28	2702	23 18 5	2701
	Spica	E.	36 23 45	2617	34 45 13	2630	33 6 59	2643	31 29 2	2656
	JUPITER	E.	57 33 24	2580	55 54 2	2591	54 14 54	2601	52 36 0	2611
	Antares	E.	82 11 5	2594	80 32 2	2604	78 53 13	2615	77 14 38	2626
15	Pollux	W.	67 36 44	2679	69 13 52	2690	70 50 45	2701	72 27 23	2713
	Regulus	W.	31 20 37	2722	32 56 47	2730	34 32 47	2738	36 8 37	2747
	JUPITER	E.	44 25 7	2666	42 47 41	2677	41 10 30	2688	39 33 34	2700
	Antares	E.	69 5 24	2681	67 28 18	2692	65 51 27	2703	64 14 50	2714
	α Aquilæ	E.	114 33 11	3717	113 16 42	3704	111 59 59	3693	110 43 4	3683
	MARS	E.	121 16 39	2948	119 45 21	2959	118 14 16	2970	116 43 26	2982
16	Pollux	W.	80 26 48	2769	82 1 56	2781	83 36 49	2792	85 11 27	2804
	Regulus	W.	44 4 47	2794	45 39 23	2804	47 13 46	2814	48 47 56	2824
	JUPITER	E.	31 32 47	2758	29 57 24	2770	28 22 17	2782	26 47 26	2794
	Antares	E.	56 15 38	2772	54 40 33	2784	53 5 44	2795	51 31 9	2806
	α Aquilæ	E.	104 16 32	3661	102 59 3	3662	101 41 35	3663	100 24 8	3665
	MARS	E.	109 12 58	3042	107 43 37	3053	106 14 30	3065	104 45 38	3077
17	Pollux	W.	93 0 57	2859	94 34 8	2870	96 7 5	2880	97 39 49	2891
	Regulus	W.	56 35 27	2876	58 8 17	2886	59 40 54	2896	61 13 18	2906
	Antares	E.	43 42 1	2864	42 8 56	2875	40 36 5	2886	39 3 29	2897
	α Aquilæ	E.	93 57 56	3694	92 41 3	3703	91 24 19	3712	90 7 45	3723
	MARS	E.	97 24 54	3136	95 57 28	3147	94 30 16	3158	93 3 17	3170
18	Pollux	W.	105 20 9	2941	106 51 35	2950	108 22 50	2959	109 53 53	2968

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
10	JUPITER	E.	105 14 29	2372	103 30 14	2377	101 46 6	2382	100 2 5	2387
11	SATURN	W.	99 19 26	2460	101 1 36	2466	102 43 37	2473	104 25 28	2480
	α Arietis	W.	95 25 43	2497	97 7 1	2504	98 48 9	2511	100 29 7	2519
	Aldebaran	W.	65 4 48	2473	66 46 39	2478	68 28 23	2484	70 9 59	2490
	Pollux	W.	20 48 33	2441	22 31 9	2445	24 13 39	2450	25 56 2	2456
	Spica	E.	70 2 36	2435	68 19 51	2441	66 37 15	2448	64 54 49	2455
	JUPITER	E.	91 23 56	2416	89 40 44	2422	87 57 40	2429	86 14 46	2435
	Antares	E.	115 55 21	2429	114 12 27	2435	112 29 42	2441	110 47 6	2448
12	SATURN	W.	112 52 14	2518	114 33 3	2526	116 13 40	2534	117 54 5	2542
	α Arietis	W.	108 51 8	2562	110 30 55	2572	112 10 29	2583	113 49 48	2593
	Aldebaran	W.	78 35 47	2523	80 16 28	2532	81 56 57	2539	83 37 16	2547
	Pollux	W.	34 25 52	2489	36 7 21	2496	37 48 40	2504	39 29 48	2512
	Spica	E.	56 25 17	2495	54 43 56	2504	53 2 48	2513	51 21 52	2522
	JUPITER	E.	77 42 44	2472	76 0 51	2480	74 19 10	2488	72 37 40	2496
	Antares	E.	102 16 36	2485	100 35 2	2493	98 53 39	2502	97 12 28	2510
13	Aldebaran	W.	91 55 53	2592	93 34 59	2602	95 13 51	2612	96 52 29	2622
	Pollux	W.	47 52 33	2556	49 32 29	2565	51 12 12	2574	52 51 42	2584
	Spica	E.	43 0 30	2572	41 20 56	2583	39 41 37	2594	38 2 33	2605
	JUPITER	E.	64 13 9	2541	62 32 53	2551	60 52 50	2560	59 13 0	2570
	Antares	E.	88 49 32	2555	87 9 35	2565	85 29 52	2574	83 50 22	2584
14	Aldebaran	W.	105 2 7	2677	106 39 18	2688	108 16 13	2700	109 52 53	2712
	Pollux	W.	61 5 46	2636	62 43 52	2646	64 21 44	2657	65 59 21	2668
	Regulus	W.	24 54 44	2702	26 31 21	2705	28 7 53	2710	29 44 19	2716
	Spica	E.	29 51 23	2670	28 14 3	2686	26 37 4	2702	25 0 26	2718
	JUPITER	E.	50 57 20	2622	49 18 55	2632	47 40 44	2643	46 2 48	2655
	Antares	E.	75 36 18	2636	73 58 12	2647	72 20 21	2658	70 42 45	2669
15	Pollux	W.	74 3 46	2724	75 39 54	2735	77 15 47	2747	78 51 25	2758
	Regulus	W.	37 44 15	2756	39 19 41	2765	40 54 56	2774	42 29 58	2784
	JUPITER	E.	37 56 54	2711	36 20 29	2723	34 44 20	2735	33 8 26	2746
	Antares	E.	62 38 29	2725	61 2 23	2737	59 26 33	2749	57 50 58	2760
	α Aquilæ	E.	109 25 59	3675	108 8 45	3669	106 51 25	3664	105 34 0	3662
	MARS	E.	115 12 51	2994	113 42 31	3006	112 12 25	3018	110 42 34	3030
16	Pollux	W.	86 45 50	2815	88 19 58	2826	89 53 52	2837	91 27 32	2848
	Regulus	W.	50 21 53	2835	51 55 36	2845	53 29 6	2855	55 2 23	2865
	JUPITER	E.	25 12 50	2807	23 38 31	2819	22 4 28	2832	20 30 41	2845
	Antares	E.	49 56 49	2818	48 22 45	2830	46 48 55	2841	45 15 21	2852
	α Aquilæ	E.	99 6 43	3668	97 49 22	3673	96 32 7	3679	95 14 58	3686
	MARS	E.	103 17 0	3089	101 48 37	3101	100 20 28	3113	98 52 34	3124
17	Pollux	W.	99 12 19	2901	100 44 36	2912	102 16 39	2922	103 48 30	2932
	Regulus	W.	62 45 30	2916	64 17 29	2926	65 49 15	2935	67 20 49	2945
	Antares	E.	37 31 6	2908	35 58 57	2919	34 27 2	2929	32 55 20	2940
	α Aquilæ	E.	88 51 22	3731	87 35 11	3747	86 19 14	3760	85 3 30	3773
	MARS	E.	91 36 32	3181	90 10 0	3192	88 43 41	3202	87 17 34	3213
18	Pollux	W.	111 24 46	2977	112 55 28	2985	114 25 59	2993	115 56 20	3001

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	IIIh	P. L. of Diff.	VIh	P. L. of Diff.	IXh	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
18	Regulus	W.	68 52 11	2954	70 23 21	2963	71 54 20	2972	73 25 8	2980
	Antares	E.	31 23 52	2951	29 52 37	2961	28 21 36	2971	26 50 47	2982
	α Aquilæ	E.	83 47 59	3788	82 32 44	3803	81 17 45	3819	80 3 2	3836
	Mars	E.	85 51 40	3223	84 25 58	3233	83 0 28	3243	81 35 9	3253
19	Regulus	W.	80 56 35	3019	82 26 24	3026	83 56 4	3033	85 25 36	3039
	Spica	W.	26 56 51	3046	28 26 7	3050	29 55 17	3054	31 24 23	3057
	α Aquilæ	E.	73 54 9	3934	72 41 24	3956	71 29 1	3980	70 17 1	4006
	Mars	E.	74 31 17	3295	73 7 0	3303	71 42 52	3310	70 18 53	3317
	Sun	E.	128 13 59	3394	126 51 36	3401	125 29 22	3408	124 7 15	3415
20	Regulus	W.	92 51 30	3065	94 20 23	3069	95 49 11	3072	97 17 54	3075
	Spica	W.	38 48 52	3073	40 17 35	3076	41 46 14	3078	43 14 50	3080
	Jupiter	W.	17 44 38	3047	19 13 52	3049	20 43 4	3051	22 12 14	3052
	Mars	E.	63 20 46	3346	61 57 28	3350	60 34 15	3354	59 11 6	3358
	Sun	E.	117 18 20	3440	115 56 49	3444	114 35 23	3448	113 14 1	3452
21	Regulus	W.	104 40 45	3084	106 9 13	3085	107 37 41	3086	109 6 8	3085
	Spica	W.	50 37 23	3085	52 5 51	3085	53 34 19	3084	55 2 48	3082
	Jupiter	W.	29 37 45	3055	31 6 50	3055	32 35 55	3054	34 5 1	3052
	Mars	E.	52 16 19	3371	50 53 29	3372	49 30 40	3372	48 7 52	3372
	Sun	E.	106 27 52	3459	105 6 42	3460	103 45 33	3459	102 24 23	3458
22	Spica	W.	62 25 46	3070	63 54 32	3066	65 23 22	3062	66 52 18	3057
	Jupiter	W.	41 31 6	3040	43 0 29	3036	44 29 57	3031	45 59 30	3026
	Antares	W.	16 33 45	3092	18 2 4	3085	19 30 32	3077	20 59 9	3069
	Mars	E.	41 13 43	3367	39 50 49	3365	38 27 52	3362	37 4 53	3359
	Sun	E.	95 38 7	3446	94 16 42	3442	92 55 13	3437	91 33 38	3432
23	Spica	W.	74 18 35	3027	75 48 14	3019	77 18 3	3011	78 48 2	3002
	Jupiter	W.	53 29 0	2995	54 59 18	2988	56 29 46	2980	58 0 23	2972
	Antares	W.	28 24 39	3030	29 54 15	3022	31 24 1	3013	32 53 58	3004
	Mars	E.	30 9 1	3342	28 45 39	3338	27 22 12	3335	25 58 41	3333
	Sun	E.	84 44 9	3399	83 21 51	3391	81 59 25	3382	80 36 49	3372
24	Spica	W.	86 20 45	2954	87 51 55	2943	89 23 19	2932	90 54 57	2920
	Jupiter	W.	65 36 21	2923	67 8 11	2912	68 40 15	2900	70 12 34	2888
	Antares	W.	40 26 43	2952	41 57 55	2941	43 29 22	2929	45 1 4	2917
	Sun	E.	73 40 57	3320	72 17 9	3308	70 53 8	3296	69 28 52	3283
25	Spica	W.	98 36 59	2857	100 10 13	2843	101 43 45	2829	103 17 35	2815
	Jupiter	W.	77 58 1	2825	79 31 57	2811	81 6 11	2796	82 40 44	2782
	Antares	W.	52 43 29	2852	54 16 49	2838	55 50 27	2824	57 24 23	2810
	Sun	E.	62 23 43	3214	60 57 51	3200	59 31 42	3185	58 5 14	3169
26	Jupiter	W.	90 38 14	2707	92 14 45	2692	93 51 36	2676	95 28 48	2660
	Antares	W.	65 18 53	2735	66 54 47	2719	68 31 2	2703	70 7 38	2687
	Sun	E.	50 48 15	3089	49 19 52	3073	47 51 9	3056	46 22 5	3039
27	Jupiter	W.	103 40 13	2580	105 19 36	2564	106 59 21	2548	108 39 28	2532
	Antares	W.	78 16 0	2607	79 54 46	2590	81 33 55	2574	83 13 26	2558
	Sun	E.	38 51 36	2955	37 20 27	2939	35 48 57	2923	34 17 7	2906

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
18	Regulus	W.	74 55 46	2989	76 26 13	2997	77 56 30	3005	79 26 37	3012
	Antares	E.	25 20 12	2993	23 49 50	3003	22 19 41	3013	20 49 45	3023
	α Aquilæ	E.	78 48 37	3854	77 34 30	3873	76 20 43	3893	75 7 16	3913
	Mars	E.	80 10 2	3262	78 45 6	3270	77 20 19	3279	75 55 43	3288
19	Regulus	W.	86 55 0	3045	88 24 17	3051	89 53 27	3056	91 22 31	3060
	Spica	W.	32 53 25	3061	34 22 22	3064	35 51 16	3067	37 20 6	3070
	α Aquilæ	E.	69 5 27	4031	67 54 18	4058	66 43 35	4086	65 33 20	4116
	Mars	E.	68 55 1	3324	67 31 17	3330	66 7 40	3336	64 44 10	3341
	Sun	E.	122 45 16	3421	121 23 23	3426	120 1 37	3431	118 39 56	3436
20	Regulus	W.	98 46 34	3078	100 15 10	3080	101 43 44	3082	103 12 15	3083
	Spica	W.	44 43 24	3082	46 11 56	3083	47 40 26	3084	49 8 55	3085
	Jupiter	W.	23 41 22	3053	25 10 29	3054	26 39 35	3055	28 8 40	3055
	Mars	E.	57 48 2	3362	56 25 2	3365	55 2 5	3367	53 39 11	3369
	Sun	E.	111 52 43	3454	110 31 27	3456	109 10 14	3457	107 49 2	3458
21	Regulus	W.	110 34 36	3084	112 3 5	3082	113 31 35	3080	115 0 8	3078
	Spica	W.	56 31 19	3081	57 59 52	3079	59 28 27	3077	60 57 5	3074
	Jupiter	W.	35 34 9	3051	37 3 19	3049	38 32 31	3046	40 1 47	3043
	Mars	E.	46 45 3	3372	45 22 14	3372	43 59 25	3371	42 36 35	3369
	Sun	E.	101 3 12	3456	99 42 0	3454	98 20 45	3452	96 59 28	3449
22	Spica	W.	68 21 19	3052	69 50 27	3047	71 19 42	3041	72 49 4	3034
	Jupiter	W.	47 29 10	3021	48 58 56	3015	50 28 49	3009	51 58 50	3002
	Antares	W.	22 27 56	3062	23 56 52	3054	25 25 57	3046	26 55 13	3038
	Mars	E.	35 41 50	3356	34 18 43	3353	32 55 33	3350	31 32 19	3346
	Sun	E.	90 11 58	3426	88 50 11	3421	87 28 18	3415	86 6 18	3407
23	Spica	W.	80 18 12	2994	81 48 32	2985	83 19 4	2975	84 49 48	2965
	Jupiter	W.	59 31 11	2963	61 2 10	2953	62 33 21	2943	64 4 45	2933
	Antares	W.	34 24 6	2994	35 54 26	2984	37 24 59	2974	38 55 44	2963
	Mars	E.	24 35 7	3331	23 11 31	3330	21 47 54	3330	20 24 17	3329
	Sun	E.	79 14 1	3363	77 51 3	3353	76 27 53	3343	75 4 31	3332
24	Spica	W.	92 26 50	2908	93 58 58	2896	95 31 22	2883	97 4 2	2870
	Jupiter	W.	71 45 7	2876	73 17 56	2864	74 51 1	2851	76 24 23	2838
	Antares	W.	46 33 1	2905	48 5 13	2892	49 37 42	2879	51 10 27	2866
	Sun	E.	68 4 22	3270	66 39 36	3257	65 14 35	3243	63 49 17	3229
25	Spica	W.	104 51 43	2801	106 26 10	2786	108 0 55	2771	109 36 0	2755
	Jupiter	W.	84 15 35	2768	85 50 45	2753	87 26 15	2738	89 2 4	2722
	Antares	W.	58 58 38	2795	60 33 12	2780	62 8 6	2765	63 43 19	2750
	Sun	E.	56 38 28	3153	55 11 23	3138	53 44 0	3122	52 16 18	3105
26	Jupiter	W.	97 6 22	2644	98 44 17	2628	100 22 34	2612	102 1 12	2596
	Antares	W.	71 44 35	2671	73 21 54	2655	74 59 34	2639	76 37 36	2623
	Sun	E.	44 52 41	3022	43 22 56	3005	41 52 50	2989	40 22 23	2972
27	Jupiter	W.	110 19 58	2516	112 0 49	2500	113 42 3	2484	115 23 39	2467
	Antares	W.	84 53 19	2542	86 33 34	2526	88 14 11	2510	89 55 10	2494
	Sun	E.	32 44 56	2890	31 12 24	2875	29 39 33	2859	28 6 22	2844

AT GREENWICH APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Semi-diameter.	Sidereal Time of Semi-diameter Passing Meridian.	Equation of Time, to be Added to / Subtracted from Apparent Time.	Diff. for 1 Hour.
		h m s	s	° ′ ″	″	′ ″	s	m s	s
Sat.	1	0 39 8.48	+9.101	N. 4 13 0.9	+58.05	16 1.96	64.46	4 13.24	0.754
SUN.	2	0 42 46.94	9.105	4 36 11.7	57.85	16 1.70	64.48	3 55.19	0.750
Mon.	3	0 46 25.50	9.109	4 59 17.5	57.63	16 1.43	64.50	3 37.24	0.746
Tues.	4	0 50 4.17	+9.114	5 22 17.8	+57.39	16 1.15	64.52	3 19.41	0.741
Wed.	5	0 53 42.97	9.120	5 45 12.3	57.14	16 0.88	64.54	3 1.71	0.735
Thur.	6	0 57 21.92	9.127	6 8 0.8	56.88	16 0.62	64.57	2 44.16	0.729
Frid.	7	1 1 1.04	+9.134	6 30 42.8	+56.61	16 0.35	64.60	2 26.77	0.721
Sat.	8	1 4 40.35	9.142	6 53 17.9	56.32	16 0.08	64.63	2 9.57	0.712
SUN.	9	1 8 19.87	9.151	7 15 45.9	56.01	15 59.81	64.67	1 52.58	0.703
Mon.	10	1 11 59.62	+9.161	7 38 6.4	+55.69	15 59.54	64.71	1 35.82	0.693
Tues.	11	1 15 39.61	9.172	8 0 19.1	55.36	15 59.27	64.75	1 19.31	0.682
Wed.	12	1 19 19.87	9.184	8 22 23.7	55.02	15 59.00	64.79	1 3.06	0.671
Thur.	13	1 23 0.42	+9.196	8 44 19.9	+54.66	15 58.74	64.83	0 47.10	0.659
Frid.	14	1 26 41.28	9.209	9 6 7.4	54.29	15 58.47	64.88	0 31.44	0.646
Sat.	15	1 30 22.46	9.223	9 27 45.9	53.91	15 58.19	64.93	0 16.11	0.632
SUN.	16	1 34 3.99	+9.238	9 49 15.0	+53.51	15 57.92	64.98	0 1.12	0.617
Mon.	17	1 37 45.88	9.254	10 10 34.5	53.10	15 57.66	65.03	0 13.50	0.601
Tues.	18	1 41 28.15	9.270	10 31 44.0	52.68	15 57.39	65.08	0 27.74	0.585
Wed.	19	1 45 10.83	+9.287	10 52 43.1	+52.25	15 57.11	65.14	0 41.58	0.568
Thur.	20	1 48 53.92	9.305	11 13 31.6	51.80	15 56.84	65.20	0 55.01	0.550
Frid.	21	1 52 37.44	9.323	11 34 9.2	51.34	15 56.58	65.26	1 8.01	0.532
Sat.	22	1 56 21.40	+9.341	11 54 35.6	+50.86	15 56.32	65.32	1 20.56	0.514
SUN.	23	2 0 5.82	9.360	12 14 50.3	50.37	15 56.05	65.39	1 32.66	0.495
Mon.	24	2 3 50.71	9.380	12 34 53.1	49.86	15 55.79	65.46	1 44.30	0.475
Tues.	25	2 7 36.08	+9.400	12 54 43.6	+49.34	15 55.54	65.53	1 55.46	0.455
Wed.	26	2 11 21.93	9.421	13 14 21.5	48.81	15 55.29	65.60	2 6.13	0.434
Thur.	27	2 15 8.28	9.442	13 33 46.5	48.26	15 55.04	65.67	2 16.31	0.413
Frid.	28	2 18 55.14	+9.463	13 52 58.1	+47.70	15 54.79	65.74	2 25.98	0.392
Sat.	29	2 22 42.51	9.484	14 11 56.0	47.12	15 54.54	65.81	2 35.14	0.371
SUN.	30	2 26 30.39	9.505	14 30 39.9	46.53	15 54.29	65.89	2 43.79	0.350
Mon.	31	2 30 18.79	+9.527	N. 14 49 9.5	+45.93	15 54.05	65.97	2 51.92	0.328

NOTE.—The mean time of semidiameter passing the meridian may be found by subtracting 0s.18 from the sidereal time.
The sign + prefixed to the hourly change of declination indicates that north declinations are increasing.

AT GREENWICH MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Equation of Time, to be Subtracted from Added to Mean Time.	Diff. for 1 Hour.	Sidereal Time, or Right Ascension of Mean Sun.
		h m s	s	° ′ ″	″	m s	s	h m s
Sat.	1	0 39 7.84	+9.103	N. 4 12 56.8	+58.06	4 13.29	+0.754	0 34 54.55
SUN.	2	0 42 46.35	9.106	4 36 7.9	57.86	3 55.24	0.750	0 38 51.10
Mon.	3	0 46 24.95	9.111	4 59 14.0	57.64	3 37.29	0.746	0 42 47.66
Tues.	4	0 50 3.66	+9.116	5 22 14.6	+57.41	3 19.45	+0.741	0 46 44.21
Wed.	5	0 53 42.51	9.122	5 45 9.5	57.16	3 1.74	0.735	0 50 40.76
Thur.	6	0 57 21.51	9.128	6 7 58.2	56.90	2 44.19	0.729	0 54 37.32
Frid.	7	1 1 0.67	+9.136	6 30 40.5	+56.62	2 26.80	+0.721	0 58 33.87
Sat.	8	1 4 40.02	9.144	6 53 15.9	56.33	2 9.60	0.712	1 2 30.42
SUN.	9	1 8 19.58	9.153	7 15 44.2	56.02	1 52.61	0.703	1 6 26.98
Mon.	10	1 11 59.37	+9.163	7 38 5.0	+55.70	1 35.84	+0.693	1 10 23.53
Tues.	11	1 15 39.41	9.174	8 0 17.9	55.37	1 19.32	0.682	1 14 20.09
Wed.	12	1 19 19.71	9.185	8 22 22.7	55.03	1 3.07	0.671	1 18 16.64
Thur.	13	1 23 0.30	+9.198	8 44 19.2	+54.67	0 47.11	+0.659	1 22 13.20
Frid.	14	1 26 41.20	9.211	9 6 7.0	54.30	0 31.45	0.646	1 26 9.75
Sat.	15	1 30 22.42	9.225	9 27 45.7	53.92	0 16.12	0.632	1 30 6.30
SUN.	16	1 34 3.98	+9.239	9 49 15.0	+53.52	0 1.13	+0.617	1 34 2.86
Mon.	17	1 37 45.91	9.255	10 10 34.7	53.11	0 13.50	0.601	1 37 59.41
Tues.	18	1 41 28.22	9.271	10 31 44.4	52.69	0 27.74	0.585	1 41 55.97
Wed.	19	1 45 10.93	+9.288	10 52 43.7	+52.25	0 41.59	+0.568	1 45 52.52
Thur.	20	1 48 54.06	9.306	11 13 32.4	51.80	0 55.02	0.550	1 49 49.08
Frid.	21	1 52 37.62	9.324	11 34 10.2	51.34	1 8.01	0.532	1 53 45.63
Sat.	22	1 56 21.62	+9.343	11 54 36.7	+50.86	1 20.57	+0.514	1 57 42.19
SUN.	23	2 0 6.07	9.362	12 14 51.6	50.37	1 32.68	0.495	2 1 38.74
Mon.	24	2 3 50.98	9.381	12 34 54.5	49.87	1 44.32	0.475	2 5 35.30
Tues.	25	2 7 36.37	+9.401	12 54 45.2	+49.35	1 55.48	+0.455	2 9 31.85
Wed.	26	2 11 22.26	9.422	13 14 23.2	48.82	2 6.15	0.434	2 13 28.41
Thur.	27	2 15 8.64	9.443	13 33 48.3	48.27	2 16.33	0.413	2 17 24.96
Frid.	28	2 18 55.52	+9.464	13 53 0.0	+47.71	2 26.00	+0.392	2 21 21.52
Sat.	29	2 22 42.91	9.485	14 11 58.0	47.13	2 35.16	0.371	2 25 18.07
SUN.	30	2 26 30.82	9.507	14 30 42.0	46.54	2 43.81	0.350	2 29 14.63
Mon.	31	2 30 19.24	+9.528	N. 14 49 11.7	+45.93	2 51.94	+0.328	2 33 11.18

NOTE.—The semidiameter for mean noon may be assumed the same as that for apparent noon. The sign + prefixed to the hourly change of declination indicates that north declinations are increasing.

Diff. for 1 Hour. +9ˢ.8565. (Table III.)

AT GREENWICH MEAN NOON.

Day of the Month.	Day of the Year.	THE SUN'S TRUE LONGITUDE. λ	λ'	Diff. for 1 Hour.	LATITUDE.	Logarithm of the Radius Vector of the Earth.	Diff. for 1 Hour.	Mean Time of Sidereal Noon.
		° ′ ″	′ ″	″	″			h m s
1	91	10 38 59.8	38 59.0	148.03	− 0.22	9.999 7888	+ 51.5	23 21 15.26
2	92	11 38 11.4	38 10.5	147.94	− 0.08	9.999 9121	51.3	23 17 19.35
3	93	12 37 20.8	37 19.7	147.84	+ 0.05	0.000 0348	51.1	23 13 23.44
4	94	13 36 27.9	36 26.7	147.75	+ 0.17	0.000 1571	+ 50.9	23 9 27.54
5	95	14 35 32.6	35 31.4	147.65	0.27	0.000 2790	50.7	23 5 31.63
6	96	15 34 35.0	34 33.7	147.55	0.35	0.000 4006	50.6	23 1 35.72
7	97	16 33 35.1	33 33.6	147.46	+ 0.39	0.000 5221	+ 50.6	22 57 39.81
8	98	17 32 32.9	32 31.3	147.36	0.38	0.000 6435	50.6	22 53 43.91
9	99	18 31 28.4	31 26.7	147.26	0.36	0.000 7650	50.6	22 49 48.00
10	100	19 30 21.6	30 19.8	147.17	+ 0.31	0.000 8866	+ 50.7	22 45 52.09
11	101	20 29 12.7	29 10.7	147.08	0.23	0.001 0083	50.8	22 41 56.18
12	102	21 28 1.6	27 59.5	147.00	0.14	0.001 1302	50.8	22 38 0.27
13	103	22 26 48.5	26 46.3	146.91	+ 0.01	0.001 2523	+ 50.9	22 34 4.36
14	104	23 25 33.4	25 31.1	146.83	− 0.11	0.001 3745	50.9	22 30 8.46
15	105	24 24 16.4	24 14.0	146.75	0.24	0.001 4967	50.9	22 26 12.55
16	106	25 22 57.5	22 55.0	146.68	− 0.37	0.001 6189	+ 50.9	22 22 16.64
17	107	26 21 36.8	21 34.2	146.60	0.49	0.001 7411	50.9	22 18 20.73
18	108	27 20 14.3	20 11.6	146.53	0.58	0.001 8631	50.8	22 14 24.82
19	109	28 18 50.1	18 47.2	146.46	− 0.66	0.001 9848	+ 50.6	22 10 28.92
20	110	29 17 24.2	17 21.2	146.39	0.72	0.002 1061	50.4	22 6 33.01
21	111	30 15 56.7	15 53.5	146.32	0.76	0.002 2268	50.2	22 2 37.10
22	112	31 14 27.6	14 24.2	146.25	− 0.76	0.002 3468	+ 49.9	21 58 41.19
23	113	32 12 56.8	12 53.3	146.18	0.74	0.002 4661	49.5	21 54 45.28
24	114	33 11 24.4	11 20.8	146.12	0.68	0.002 5844	49.0	21 50 49.37
25	115	34 9 50.4	9 46.7	146.05	− 0.60	0.002 7016	+ 48.5	21 46 53.46
26	116	35 8 14.7	8 10.9	145.98	0.49	0.002 8175	48.0	21 42 57.55
27	117	36 6 37.4	6 33.5	145.91	0.36	0.002 9319	47.4	21 39 1.64
28	118	37 4 58.4	4 54.3	145.84	− 0.22	0.003 0448	+ 46.7	21 35 5.73
29	119	38 3 17.6	3 13.4	145.76	− 0.08	0.003 1561	46.0	21 31 9.82
30	120	39 1 35.0	1 30.6	145.68	+ 0.07	0.003 2658	45.3	21 27 13.91
31	121	39 59 50.5	59 46.0	145.60	+ 0.20	0.003 3738	+ 44.7	21 23 18.00

NOTE.—The longitudes in the column λ are referred to the true equinox of their own date, while those in column λ' are referred to the mean equinox of the beginning of the Besselian fictitious year.

Diff. for 1 Hour, − 9ˢ.8296. (Table II.)

GREENWICH MEAN TIME.

THE MOON'S

Day of the Month.	SEMIDIAMETER. Noon.	SEMIDIAMETER. Midnight.	HORIZONTAL PARALLAX. Noon.	Diff. for 1 Hour.	HORIZONTAL PARALLAX. Midnight.	Diff. for 1 Hour.	UPPER TRANSIT. Meridian of Greenwich.	Diff. for 1 Hour.	AGE. Noon.
	′ ″	′ ″	° ′ ″	″	° ′ ″	″	h m	m	d
1	16 21.8	16 22.8	59 57.5	+0.44	60 1.1	+0.18	1 48.3	2.20	2.0
2	16 23.0	16 22.4	60 1.7	−0.07	59 59.4	−0.31	2 43.0	2.35	3.0
3	16 21.0	16 19.0	59 54.4	0.52	59 47.0	0.70	3 41.4	2.50	4.0
4	16 16.4	16 13.4	59 37.6	−0.85	59 26.5	−0.98	4 42.8	2.59	5.0
5	16 10.0	16 6.3	59 14.1	1.08	59 0.6	1.15	5 45.3	2.59	6.0
6	16 2.4	15 58.4	58 46.4	1.21	58 31.6	1.25	6 46.5	2.48	7.0
7	15 54.3	15 50.2	58 16.5	−1.27	58 1.2	−1.27	7 44.2	2.31	8.0
8	15 46.0	15 41.8	57 45.9	1.27	57 30.6	1.27	8 37.5	2.13	9.0
9	15 37.6	15 33.5	57 15.3	1.27	57 0.1	1.26	9 26.5	1.97	10.0
10	15 29.4	15 25.4	56 45.1	−1.24	56 30.3	−1.22	10 12.1	1.85	11.0
11	15 21.4	15 17.5	56 15.7	1.20	56 1.4	1.18	10 55.5	1.78	12.0
12	15 13.7	15 10.0	55 47.4	1.15	55 33.7	1.12	11 37.7	1.74	13.0
13	15 6.4	15 3.0	55 20.6	−1.07	55 8.1	−1.01	12 19.7	1.77	14.0
14	14 59.8	14 56.8	54 56.3	0.95	54 45.3	0.87	13 2.5	1.81	15.0
15	14 54.1	14 51.7	54 35.4	0.77	54 26.7	0.67	13 46.9	1.89	16.0
16	14 49.7	14 48.1	54 19.4	−0.55	54 13.6	−0.41	14 33.4	1.98	17.0
17	14 47.0	14 46.4	54 9.5	−0.26	54 7.4	−0.09	15 22.0	2.06	18.0
18	14 46.4	14 46.9	54 7.3	+0.08	54 9.3	+0.26	16 12.4	2.13	19.0
19	14 48.1	14 50.0	54 13.6	+0.46	54 20.4	+0.67	17 3.8	2.15	20.0
20	14 52.5	14 55.6	54 29.6	0.87	54 41.3	1.07	17 55.1	2.13	21.0
21	14 59.5	15 4.0	54 55.4	1.28	55 12.0	1.48	18 45.6	2.08	22.0
22	15 9.2	15 14.9	55 30.9	+1.67	55 52.0	+1.84	19 34.7	2.01	23.0
23	15 21.2	15 28.0	56 15.1	1.99	56 39.9	2.12	20 22.4	1.97	24.0
24	15 35.1	15 42.5	57 6.0	2.21	57 33.0	2.27	21 9.3	1.95	25.0
25	15 50.0	15 57.4	58 0.4	+2.28	58 27.7	+2.25	21 56.2	1.97	26.0
26	16 4.6	16 11.5	58 54.3	2.16	59 19.5	2.01	22 44.2	2.04	27.0
27	16 17.8	16 23.4	59 42.6	1.82	60 3.1	1.58	23 34.7	2.17	28.0
28	16 28.1	16 31.8	60 20.4	+1.29	60 34.1	+0.97	δ	. .	29.0
29	16 34.4	16 35.9	60 43.7	+0.63	60 49.1	+0.27	0 28.9	2.34	0.6
30	16 36.2	16 35.3	60 50.1	−0.09	60 46.9	−0.43	1 27.4	2.53	1.6
31	16 33.3	16 30.4	60 39.8	−0.75	60 29.0	−1.03	2 29.9	2.67	2.6

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 1.			
	h m s	s	° ′ ″	″
0	2 19 25.24	2.3788	N.13 37 40.5	14.984
1	2 21 42.12	2.3840	13 52 37.3	14.908
2	2 23 59.32	2.3893	14 7 29.4	14.829
3	2 26 16.84	2.3947	14 22 16.8	14.750
4	2 28 34.68	2.3001	14 36 59.4	14.668
5	2 30 52.85	2.3055	14 51 37.0	14.585
6	2 33 11.34	2.3109	15 6 9.6	14.500
7	2 35 30.16	2.3165	15 20 37.0	14.413
8	2 37 49.32	2.3221	15 34 59.1	14.324
9	2 40 8.81	2.3276	15 49 15.9	14.233
10	2 42 28.63	2.3333	16 3 27.1	14.140
11	2 44 48.80	2.3389	16 17 32.7	14.046
12	2 47 9.30	2.3446	16 31 32.6	13.949
13	2 49 30.15	2.3503	16 45 26.6	13.850
14	2 51 51.34	2.3561	16 59 14.6	13.750
15	2 54 12.88	2.3618	17 12 56.6	13.648
16	2 56 34.76	2.3676	17 26 32.4	13.544
17	2 58 56.99	2.3735	17 40 1.9	13.438
18	3 1 19.58	2.3793	17 53 25.0	13.330
19	3 3 42.51	2.3852	18 6 41.5	13.220
20	3 6 5.80	2.3911	18 19 51.4	13.108
21	3 8 29.44	2.3969	18 32 54.5	12.995
22	3 10 53.43	2.4028	18 45 50.8	12.880
23	3 13 17.77	2.4087	N.18 58 40.1	12.763
	SUNDAY 2.			
0	3 15 42.47	2.4146	N.19 11 22.4	12.645
1	3 18 7.52	2.4205	19 23 57.5	12.524
2	3 20 32.93	2.4264	19 36 25.3	12.401
3	3 22 58.69	2.4323	19 48 45.7	12.277
4	3 25 24.80	2.4382	20 0 58.5	12.151
5	3 27 51.27	2.4441	20 13 3.7	12.023
6	3 30 18.09	2.4499	20 25 1.3	11.894
7	3 32 45.26	2.4558	20 36 51.0	11.762
8	3 35 12.78	2.4616	20 48 32.7	11.628
9	3 37 40.65	2.4674	21 0 6.4	11.494
10	3 40 8.87	2.4732	21 11 32.0	11.358
11	3 42 37.43	2.4789	21 22 49.4	11.220
12	3 45 6.34	2.4847	21 33 58.4	11.080
13	3 47 35.59	2.4904	21 44 59.0	10.938
14	3 50 5.19	2.4961	21 55 51.0	10.795
15	3 52 35.12	2.5017	22 6 34.4	10.651
16	3 55 5.39	2.5073	22 17 9.1	10.504
17	3 57 35.99	2.5128	22 27 34.9	10.356
18	4 0 6.92	2.5183	22 37 51.8	10.207
19	4 2 38.18	2.5238	22 47 59.7	10.055
20	4 5 9.77	2.5292	22 57 58.5	9.903
21	4 7 41.68	2.5344	23 7 48.0	9.748
22	4 10 13.90	2.5397	23 17 28.2	9.592
23	4 12 46.44	2.5449	23 26 59.0	9.435
24	4 15 19.29	2.5500	N.23 36 20.4	9.277
	MONDAY 3.			
0	4 15 19.29	2.5500	N.23 36 20.4	9.277
1	4 17 52.44	2.5551	23 45 32.2	9.117
2	4 20 25.90	2.5601	23 54 34.4	8.955
3	4 22 59.65	2.5650	24 3 26.9	8.793
4	4 25 33.70	2.5698	24 12 9.5	8.628
5	4 28 8.03	2.5745	24 20 42.2	8.462
6	4 30 42.64	2.5792	24 29 4.9	8.295
7	4 33 17.53	2.5838	24 37 17.6	8.128
8	4 35 52.69	2.5883	24 45 20.2	7.958
9	4 38 28.12	2.5926	24 53 12.6	7.788
10	4 41 3.80	2.5968	25 0 54.7	7.616
11	4 43 39.74	2.6011	25 8 26.5	7.443
12	4 46 15.93	2.6052	25 15 47.9	7.269
13	4 48 52.36	2.6091	25 22 58.8	7.093
14	4 51 29.02	2.6129	25 29 59.1	6.917
15	4 54 5.91	2.6167	25 36 48.8	6.740
16	4 56 43.02	2.6203	25 43 27.9	6.562
17	4 59 20.34	2.6238	25 49 56.2	6.382
18	5 1 57.87	2.6272	25 56 13.7	6.202
19	5 4 35.60	2.6304	26 2 20.4	6.021
20	5 7 13.52	2.6335	26 8 16.2	5.839
21	5 9 51.62	2.6364	26 14 1.1	5.657
22	5 12 29.90	2.6393	26 19 35.0	5.473
23	5 15 8.34	2.6421	N.26 24 57.8	5.288
	TUESDAY 4.			
0	5 17 46.94	2.6446	N.26 30 9.6	5.103
1	5 20 25.69	2.6471	26 35 10.2	4.918
2	5 23 4.59	2.6494	26 39 59.7	4.731
3	5 25 43.62	2.6515	26 44 37.9	4.543
4	5 28 22.77	2.6535	26 49 4.9	4.357
5	5 31 2.04	2.6553	26 53 20.7	4.169
6	5 33 41.41	2.6570	26 57 25.2	3.980
7	5 36 20.88	2.6586	27 1 18.3	3.791
8	5 39 0.44	2.6600	27 5 0.1	3.601
9	5 41 40.08	2.6612	27 8 30.4	3.411
10	5 44 19.79	2.6623	27 11 49.4	3.222
11	5 46 59.56	2.6633	27 14 57.0	3.031
12	5 49 39.39	2.6641	27 17 53.1	2.839
13	5 52 19.25	2.6647	27 20 37.7	2.648
14	5 54 59.15	2.6652	27 23 10.9	2.458
15	5 57 39.07	2.6654	27 25 32.6	2.266
16	6 0 19.00	2.6655	27 27 42.8	2.074
17	6 2 58.93	2.6655	27 29 41.5	1.883
18	6 5 38.86	2.6653	27 31 28.7	1.692
19	6 8 18.77	2.6649	27 33 4.5	1.500
20	6 10 58.65	2.6644	27 34 28.7	1.308
21	6 13 38.50	2.6638	27 35 41.5	1.118
22	6 16 18.31	2.6630	27 36 42.8	0.926
23	6 18 58.06	2.6619	27 37 32.6	0.735
24	6 21 37.74	2.6608	N.27 38 11.0	0.544

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 5.			
	h m s	s	° ′ ″	″
0	6 21 37.74	2.6608	N.27 38 11.0	0.544
1	6 24 17.35	2.6594	27 38 37.9	0.353
2	6 26 56.87	2.6579	27 38 53.4	+0.163
3	6 29 36.30	2.6563	27 38 57.5	−0.027
4	6 32 15.63	2.6545	27 38 50.2	0.217
5	6 34 54.84	2.6585	27 38 31.5	0.406
6	6 37 33.93	2.6504	27 38 1.5	0.594
7	6 40 12.89	2.6482	27 37 20.2	0.783
8	6 42 51.71	2.6458	27 36 27.6	0.970
9	6 45 30.38	2.6432	27 35 23.8	1.158
10	6 48 8.89	2.6404	27 34 8.7	1.344
11	6 50 47.23	2.6375	27 32 42.5	1.530
12	6 53 25.39	2.6344	27 31 5.1	1.716
13	6 56 3.36	2.6313	27 29 16.6	1.900
14	6 58 41.14	2.6279	27 27 17.1	2.084
15	7 1 18.71	2.6244	27 25 6.5	2.267
16	7 3 56.07	2.6208	27 22 45.0	2.449
17	7 6 33.21	2.6171	27 20 12.6	2.631
18	7 9 10.12	2.6132	27 17 29.3	2.812
19	7 11 46.79	2.6092	27 14 35.2	2.992
20	7 14 23.22	2.6050	27 11 30.3	3.171
21	7 16 59.39	2.6007	27 8 14.7	3.348
22	7 19 35.30	2.5963	27 4 48.5	3.525
23	7 22 10.94	2.5918	N.27 1 11.7	3.702
	THURSDAY 6.			
0	7 24 46.31	2.5871	N.26 57 24.3	3.877
1	7 27 21.39	2.5823	26 53 26.5	4.050
2	7 29 56.19	2.5774	26 49 18.3	4.223
3	7 32 30.68	2.5723	26 44 59.8	4.394
4	7 35 4.87	2.5673	26 40 31.0	4.565
5	7 37 38.75	2.5621	26 35 52.0	4.734
6	7 40 12.32	2.5568	26 31 2.9	4.902
7	7 42 45.56	2.5513	26 26 3.7	5.069
8	7 45 18.48	2.5458	26 20 54.6	5.235
9	7 47 51.06	2.5402	26 15 35.5	5.400
10	7 50 23.30	2.5344	26 10 6.6	5.563
11	7 52 55.19	2.5286	26 4 27.9	5.726
12	7 55 26.73	2.5227	25 58 39.5	5.886
13	7 57 57.91	2.5167	25 52 41.6	6.045
14	8 0 28.73	2.5107	25 46 34.1	6.203
15	8 2 59.19	2.5046	25 40 17.2	6.360
16	8 5 29.28	2.4983	25 33 50.9	6.515
17	8 7 58.99	2.4920	25 27 15.4	6.668
18	8 10 28.32	2.4857	25 20 30.7	6.821
19	8 12 57.27	2.4793	25 13 36.9	6.973
20	8 15 25.84	2.4729	25 6 34.0	7.123
21	8 17 54.02	2.4663	24 59 22.2	7.271
22	8 20 21.80	2.4598	24 52 1.5	7.418
23	8 22 49.19	2.4532	24 44 32.1	7.563
24	8 25 16.18	2.4465	N.24 36 54.0	7.707

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 7.			
	h m s	s	° ′ ″	″
0	8 25 16.18	2.4465	N.24 36 54.0	7.707
1	8 27 42.77	2.4398	24 29 7.3	7.848
2	8 30 8.95	2.4329	24 21 12.2	7.989
3	8 32 34.72	2.4262	24 13 8.6	8.126
4	8 35 0.09	2.4193	24 4 56.7	8.267
5	8 37 25.04	2.4124	23 56 36.6	8.403
6	8 39 49.58	2.4056	23 48 8.3	8.538
7	8 42 13.71	2.3987	23 39 32.0	8.672
8	8 44 37.42	2.3917	23 30 47.7	8.803
9	8 47 0.71	2.3847	23 21 55.6	8.933
10	8 49 23.58	2.3778	23 12 55.7	9.063
11	8 51 46.04	2.3708	23 3 48.1	9.190
12	8 54 8.07	2.3637	22 54 32.9	9.315
13	8 56 29.68	2.3567	22 45 10.2	9.439
14	8 58 50.87	2.3496	22 35 40.2	9.562
15	9 1 11.64	2.3427	22 26 2.9	9.683
16	9 3 31.99	2.3356	22 16 18.3	9.803
17	9 5 51.91	2.3285	22 6 26.6	9.920
18	9 8 11.41	2.3215	21 56 27.9	10.036
19	9 10 30.49	2.3145	21 46 22.3	10.151
20	9 12 49.15	2.3075	21 36 9.8	10.264
21	9 15 7.39	2.3004	21 25 50.6	10.376
22	9 17 25.20	2.2933	21 15 24.7	10.487
23	9 19 42.59	2.2864	N.21 4 52.2	10.595
	SATURDAY 8.			
0	9 21 59.57	2.2795	N.20 54 13.3	10.702
1	9 24 16.13	2.2725	20 43 28.0	10.807
2	9 26 32.27	2.2656	20 32 36.5	10.910
3	9 28 48.00	2.2588	20 21 38.8	11.013
4	9 31 3.32	2.2518	20 10 35.0	11.114
5	9 33 18.22	2.2450	19 59 25.2	11.213
6	9 35 32.72	2.2383	19 48 9.4	11.311
7	9 37 46.81	2.2314	19 36 47.8	11.408
8	9 40 0.49	2.2247	19 25 20.5	11.503
9	9 42 13.77	2.2179	19 13 47.5	11.596
10	9 44 26.64	2.2112	19 2 9.0	11.688
11	9 46 39.11	2.2046	18 50 25.0	11.778
12	9 48 51.19	2.1980	18 38 35.6	11.867
13	9 51 2.87	2.1914	18 26 41.0	11.953
14	9 53 14.16	2.1849	18 14 41.2	12.039
15	9 55 25.06	2.1784	18 2 36.3	12.123
16	9 57 35.57	2.1720	17 50 26.4	12.207
17	9 59 45.70	2.1657	17 38 11.5	12.288
18	10 1 55.45	2.1593	17 25 51.8	12.368
19	10 4 4.82	2.1530	17 13 27.4	12.446
20	10 6 13.81	2.1468	17 0 58.3	12.523
21	10 8 22.43	2.1406	16 48 24.6	12.598
22	10 10 30.68	2.1344	16 35 46.5	12.673
23	10 12 38.56	2.1283	16 23 3.9	12.746
24	10 14 46.08	2.1223	N.16 10 17.0	12.817

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 9.			
	h m s	s	° ′ ″	″
0	10 14 46.08	2.1323	N.16 10 17.0	12.817
1	10 16 53.24	2.1164	15 57 25.9	12.886
2	10 19 0.05	2.1105	15 44 30.7	12.954
3	10 21 6.50	2.1047	15 31 31.4	13.022
4	10 23 12.61	2.0989	15 18 28.1	13.088
5	10 25 18.37	2.0931	15 5 20.9	13.152
6	10 27 23.78	2.0874	14 52 9.9	13.214
7	10 29 28.86	2.0818	14 38 55.2	13.276
8	10 31 33.60	2.0763	14 25 36.8	13.336
9	10 33 38.02	2.0709	14 12 14.9	13.394
10	10 35 42.11	2.0654	13 58 49.5	13.452
11	10 37 45.87	2.0601	13 45 20.7	13.508
12	10 39 49.32	2.0548	13 31 48.5	13.563
13	10 41 52.45	2.0496	13 18 13.1	13.616
14	10 43 55.27	2.0445	13 4 34.6	13.668
15	10 45 57.79	2.0394	12 50 52.9	13.720
16	10 48 0.00	2.0343	12 37 8.2	13.769
17	10 50 1.91	2.0293	12 23 20.6	13.817
18	10 52 3.52	2.0245	12 9 30.2	13.863
19	10 54 4.85	2.0197	11 55 37.0	13.909
20	10 56 5.89	2.0149	11 41 41.1	13.954
21	10 58 6.64	2.0103	11 27 42.5	13.998
22	11 0 7.12	2.0057	11 13 41.4	14.039
23	11 2 7.32	2.0012	N.10 59 37.8	14.080
	MONDAY 10.			
0	11 4 7.26	1.9968	N.10 45 31.8	14.119
1	11 6 6.93	1.9923	10 31 23.5	14.157
2	11 8 6.34	1.9880	10 17 13.0	14.194
3	11 10 5.49	1.9838	10 3 0.2	14.230
4	11 12 4.39	1.9796	9 48 45.4	14.264
5	11 14 3.04	1.9754	9 34 28.5	14.297
6	11 16 1.44	1.9714	9 20 9.7	14.329
7	11 17 59.61	1.9675	9 5 49.0	14.361
8	11 19 57.54	1.9636	8 51 26.4	14.391
9	11 21 55.24	1.9598	8 37 2.1	14.419
10	11 23 52.72	1.9561	8 22 36.1	14.447
11	11 25 49.97	1.9524	8 8 8.5	14.473
12	11 27 47.01	1.9488	7 53 39.4	14.498
13	11 29 43.83	1.9453	7 39 8.8	14.522
14	11 31 40.44	1.9418	7 24 36.8	14.544
15	11 33 36.85	1.9385	7 10 3.5	14.566
16	11 35 33.06	1.9353	6 55 28.9	14.587
17	11 37 29.08	1.9320	6 40 53.1	14.606
18	11 39 24.90	1.9288	6 26 16.2	14.624
19	11 41 20.54	1.9258	6 11 38.2	14.642
20	11 43 15.99	1.9228	5 56 59.2	14.658
21	11 45 11.27	1.9198	5 42 19.3	14.673
22	11 47 6.37	1.9169	5 27 38.5	14.687
23	11 49 1.30	1.9142	5 12 56.9	14.699
24	11 50 56.07	1.9115	N. 4 58 14.6	14.711

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 11.			
	h m s	s	° ′ ″	″
0	11 50 56.07	1.9115	N. 4 58 14.6	14.711
1	11 52 50.68	1.9088	4 43 31.6	14.722
2	11 54 45.13	1.9063	4 28 48.0	14.731
3	11 56 39.43	1.9038	4 14 3.9	14.739
4	11 58 33.58	1.9013	3 59 19.3	14.747
5	12 0 27.59	1.8990	3 44 34.3	14.753
6	12 2 21.46	1.8967	3 29 48.9	14.759
7	12 4 15.19	1.8944	3 15 3.2	14.763
8	12 6 8.79	1.8923	3 0 17.3	14.766
9	12 8 2.27	1.8903	2 45 31.3	14.768
10	12 9 55.63	1.8883	2 30 45.1	14.770
11	12 11 48.87	1.8864	2 15 58.9	14.770
12	12 13 42.00	1.8846	2 1 12.7	14.769
13	12 15 35.02	1.8828	1 46 26.6	14.768
14	12 17 27.93	1.8811	1 31 40.6	14.764
15	12 19 20.75	1.8795	1 16 54.9	14.760
16	12 21 13.47	1.8779	1 2 9.4	14.756
17	12 23 6.10	1.8764	0 47 24.2	14.750
18	12 24 58.64	1.8750	0 32 39.4	14.743
19	12 26 51.10	1.8737	0 17 55.0	14.736
20	12 28 43.48	1.8723	N. 0 3 11.1	14.726
21	12 30 35.78	1.8711	S. 0 11 32.1	14.716
22	12 32 28.01	1.8700	0 26 14.8	14.706
23	12 34 20.18	1.8690	S. 0 40 56.8	14.694
	WEDNESDAY 12.			
0	12 36 12.29	1.8680	S. 0 55 38.1	14.682
1	12 38 4.34	1.8670	1 10 18.6	14.668
2	12 39 56.33	1.8661	1 24 58.3	14.653
3	12 41 48.27	1.8653	1 39 37.0	14.638
4	12 43 40.17	1.8647	1 54 14.8	14.622
5	12 45 32.03	1.8640	2 8 51.6	14.604
6	12 47 23.85	1.8633	2 23 27.3	14.585
7	12 49 15.63	1.8628	2 38 1.8	14.566
8	12 51 7.39	1.8624	2 52 35.2	14.546
9	12 52 59.12	1.8620	3 7 7.3	14.525
10	12 54 50.83	1.8617	3 21 38.2	14.503
11	12 56 42.52	1.8614	3 36 7.7	14.479
12	12 58 34.20	1.8613	3 50 35.7	14.455
13	13 0 25.87	1.8611	4 5 2.3	14.431
14	13 2 17.53	1.8610	4 19 27.4	14.405
15	13 4 9.19	1.8610	4 33 50.9	14.378
16	13 6 0.85	1.8611	4 48 12.8	14.351
17	13 7 52.52	1.8613	5 2 33.0	14.322
18	13 9 44.20	1.8614	5 16 51.4	14.293
19	13 11 35.89	1.8617	5 31 8.1	14.263
20	13 13 27.60	1.8620	5 45 22.9	14.231
21	13 15 19.33	1.8624	5 59 35.8	14.198
22	13 17 11.09	1.8628	6 13 46.7	14.165
23	13 19 2.87	1.8633	6 27 55.6	14.132
24	13 20 54.68	1.8638	S. 6 42 2.5	14.098

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 13.			
	h m s	s	° ′ ″	″
0	13 20 54.68	1.8638	S. 6 42 2.5	14.098
1	13 22 46.53	1.8645	6 56 7.3	14.062
2	13 24 38.42	1.8653	7 10 9.9	14.024
3	13 26 30.36	1.8660	7 24 10.2	13.987
4	13 28 22.34	1.8668	7 38 8.3	13.949
5	13 30 14.37	1.8676	7 52 4.1	13.910
6	13 32 6.45	1.8685	8 5 57.5	13.869
7	13 33 58.59	1.8695	8 19 48.4	13.828
8	13 35 50.79	1.8705	8 33 36.9	13.787
9	13 37 43.05	1.8716	8 47 22.8	13.744
10	13 39 35.38	1.8728	9 1 6.2	13.701
11	13 41 27.78	1.8740	9 14 46.9	13.656
12	13 43 20.26	1.8753	9 28 24.9	13.611
13	13 45 12.81	1.8766	9 42 0.2	13.564
14	13 47 5.45	1.8780	9 55 32.6	13.517
15	13 48 58.17	1.8794	10 9 2.2	13.469
16	13 50 50.98	1.8809	10 22 28.9	13.420
17	13 52 43.88	1.8824	10 35 52.6	13.371
18	13 54 36.87	1.8840	10 49 13.4	13.321
19	13 56 29.96	1.8857	11 2 31.1	13.269
20	13 58 23.15	1.8874	11 15 45.7	13.217
21	14 0 16.45	1.8892	11 28 57.1	13.163
22	14 2 9.85	1.8909	11 42 5.3	13.109
23	14 4 3.36	1.8928	S. 11 55 10.2	13.055
	FRIDAY 14.			
0	14 5 56.98	1.8947	S. 12 8 11.9	13.000
1	14 7 50.72	1.8967	12 21.10.2	12.943
2	14 9 44.58	1.8987	12 34 5.0	12.885
3	14 11 38.56	1.9008	12 46 56.4	12.827
4	14 13 32.67	1.9028	12 59 44.3	12.768
5	14 15 26.90	1.9049	13 12 28.6	12.708
6	14 17 21.26	1.9072	13 25 9.3	12.648
7	14 19 15.76	1.9094	13 37 46.3	12.586
8	14 21 10.39	1.9117	13 50 19.6	12.524
9	14 23 5.16	1.9140	14 2 49.2	12.461
10	14 25 0.07	1.9163	14 15 14.9	12.397
11	14 26 55.12	1.9188	14 27 36.8	12.332
12	14 28 50.32	1.9213	14 39 54.7	12.266
13	14 30 45.67	1.9238	14 52 8.7	12.199
14	14 32 41.17	1.9263	15 4 18.6	12.132
15	14 34 36.82	1.9288	15 16 24.5	12.064
16	14 36 32.63	1.9315	15 28 26.3	11.995
17	14 38 28.60	1.9342	15 40 23.9	11.925
18	14 40 24.73	1.9368	15 52 17.3	11.855
19	14 42 21.02	1.9396	16 4 6.5	11.783
20	14 44 17.48	1.9424	16 15 51.3	11.711
21	14 46 14.11	1.9453	16 27 31.8	11.638
22	14 48 10.91	1.9481	16 39 7.9	11.564
23	14 50 7.88	1.9509	16 50 39.5	11.489
24	14 52 5.02	1.9538	S. 17 2 6.6	11.413

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 15.			
	h m s	s	° ′ ″	″
0	14 52 5.02	1.9538	S. 17 2 6.6	11.413
1	14 54 2.34	1.9568	17 13 29.1	11.337
2	14 55 59.84	1.9598	17 24 47.0	11.260
3	14 57 57.51	1.9628	17 36 0.3	11.183
4	14 59 55.37	1.9658	17 47 8.9	11.104
5	15 1 53.41	1.9688	17 58 12.8	11.024
6	15 3 51.63	1.9719	18 9 11.8	10.943
7	15 5 50.04	1.9751	18 20 6.0	10.862
8	15 7 48.64	1.9783	18 30 55.3	10.780
9	15 9 47.43	1.9814	18 41 39.6	10.697
10	15 11 46.41	1.9846	18 52 18.9	10.613
11	15 13 45.58	1.9878	19 2 53.2	10.529
12	15 15 44.95	1.9911	19 13 22.4	10.444
13	15 17 44.51	1.9943	19 23 46.5	10.358
14	15 19 44.27	1.9977	19 34 5.4	10.271
15	15 21 44.23	2.0010	19 44 19.0	10.183
16	15 23 44.39	2.0043	19 54 27.4	10.096
17	15 25 44.75	2.0077	20 4 30.5	10.007
18	15 27 45.31	2.0110	20 14 28.2	9.917
19	15 29 46.07	2.0143	20 24 20.5	9.826
20	15 31 47.03	2.0178	20 34 7.3	9.734
21	15 33 48.20	2.0212	20 43 48.6	9.642
22	15 35 49.57	2.0246	20 53 24.4	9.549
23	15 37 51.15	2.0281	S. 21 2 54.5	9.455
	SUNDAY 16.			
0	15 39 52.94	2.0315	S. 21 12 19.0	9.361
1	15 41 54.93	2.0349	21 21 37.8	9.266
2	15 43 57.13	2.0384	21 30 50.9	9.170
3	15 45 59.54	2.0418	21 39 58.2	9.073
4	15 48 2.15	2.0453	21 48 59.7	8.976
5	15 50 4.98	2.0488	21 57 55.3	8.878
6	15 52 8.01	2.0523	22 6 45.0	8.778
7	15 54 11.25	2.0558	22 15 28.7	8.678
8	15 56 14.70	2.0593	22 24 6.4	8.578
9	15 58 18.36	2.0628	22 32 38.0	8.477
10	16 0 22.23	2.0663	22 41 3.6	8.375
11	16 2 26.31	2.0697	22 49 23.0	8.273
12	16 4 30.59	2.0731	22 57 36.3	8.169
13	16 6 35.08	2.0766	23 5 43.3	8.065
14	16 8 39.78	2.0801	23 13 44.1	7.960
15	16 10 44.69	2.0836	23 21 38.5	7.854
16	16 12 49.81	2.0870	23 29 26.6	7.748
17	16 14 55.13	2.0904	23 37 8.3	7.642
18	16 17 0.66	2.0938	23 44 43.6	7.534
19	16 19 6.39	2.0973	23 52 12.4	7.426
20	16 21 12.33	2.1007	23 59 34.7	7.317
21	16 23 18.47	2.1040	24 6 50.4	7.208
22	16 25 24.81	2.1074	24 13 59.6	7.098
23	16 27 31.36	2.1108	24 21 2.1	6.986
24	16 29 38.11	2.1142	S. 24 27 57.9	6.874

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 17.			
	h m s	s	° ′ ″	″
0	16 29 38.11	2.1142	S.24 27 57.9	6.874
1	16 31 45.06	2.1174	24 34 47.0	6.763
2	16 33 52.20	2.1207	24 41 29.4	6.650
3	16 35 59.54	2.1240	24 48 5.0	6.536
4	16 38 7.08	2.1273	24 54 33.7	6.422
5	16 40 14.81	2.1304	25 0 55.6	6.308
6	16 42 22.73	2.1336	25 7 10.6	6.192
7	16 44 30.84	2.1368	25 13 18.6	6.076
8	16 46 39.14	2.1399	25 19 19.7	5.960
9	16 48 47.63	2.1430	25 25 13.8	5.843
10	16 50 56.30	2.1460	25 31 0.8	5.724
11	16 53 5.15	2.1491	25 36 40.7	5.606
12	16 55 14.19	2.1522	25 42 13.5	5.488
13	16 57 23.41	2.1551	25 47 39.2	5.368
14	16 59 32.80	2.1580	25 52 57.6	5.247
15	17 1 42.37	2.1609	25 58 8.8	5.127
16	17 3 52.11	2.1638	26 3 12.8	5.006
17	17 6 2.02	2.1666	26 8 9.5	4.884
18	17 8 12.10	2.1694	26 12 58.9	4.762
19	17 10 22.35	2.1722	26 17 41.0	4.639
20	17 12 32.76	2.1748	26 22 15.6	4.516
21	17 14 43.33	2.1775	26 26 42.9	4.393
22	17 16 54.06	2.1801	26 31 2.7	4.268
23	17 19 4.94	2.1826	S.26 35 15.1	4.144
	TUESDAY 18.			
0	17 21 15.97	2.1851	S.26 39 20.0	4.018
1	17 23 27.15	2.1876	26 43 17.3	3.893
2	17 25 38.48	2.1900	26 47 7.1	3.767
3	17 27 49.95	2.1924	26 50 49.3	3.640
4	17 30 1.57	2.1948	26 54 23.9	3.513
5	17 32 13.32	2.1969	26 57 50.9	3.386
6	17 34 25.20	2.1992	27 1 10.2	3.258
7	17 36 37.22	2.2013	27 4 21.8	3.129
8	17 38 49.36	2.2033	27 7 25.7	3.001
9	17 41 1.62	2.2054	27 10 21.9	2.873
10	17 43 14.01	2.2074	27 13 10.4	2.743
11	17 45 26.51	2.2093	27 15 51.1	2.613
12	17 47 39.13	2.2112	27 18 24.0	2.483
13	17 49 51.86	2.2130	27 20 49.1	2.353
14	17 52 4.69	2.2148	27 23 6.4	2.223
15	17 54 17.63	2.2165	27 25 15.8	2.091
16	17 56 30.67	2.2181	27 27 17.3	1.960
17	17 58 43.80	2.2197	27 29 11.0	1.829
18	18 0 57.03	2.2212	27 30 56.8	1.697
19	18 3 10.34	2.2226	27 32 34.6	1.564
20	18 5 23.74	2.2240	27 34 4.5	1.433
21	18 7 37.22	2.2253	27 35 26.5	1.300
22	18 9 50.77	2.2265	27 36 40.5	1.167
23	18 12 4.40	2.2277	27 37 46.5	1.033
24	18 14 18.10	2.2289	S.27 38 44.5	0.900

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 19.			
	h m s	s	° ′ ″	″
0	18 14 18.10	2.2289	S.27 38 44.5	0.900
1	18 16 31.87	2.2299	27 39 34.5	0.767
2	18 18 45.69	2.2308	27 40 16.5	0.633
3	18 20 59.57	2.2318	27 40 50.5	0.499
4	18 23 13.51	2.2327	27 41 16.4	0.365
5	18 25 27.50	2.2335	27 41 34.3	0.231
6	18 27 41.53	2.2343	27 41 44.1	−0.097
7	18 29 55.61	2.2349	27 41 45.9	+0.038
8	18 32 9.72	2.2355	27 41 39.6	0.173
9	18 34 23.87	2.2361	27 41 25.2	0.308
10	18 36 38.05	2.2365	27 41 2.7	0.442
11	18 38 52.25	2.2369	27 40 32.2	0.576
12	18 41 6.48	2.2373	27 39 53.6	0.711
13	18 43 20.72	2.2375	27 39 6.9	0.847
14	18 45 34.98	2.2377	27 38 12.0	0.982
15	18 47 49.24	2.2378	27 37 9.1	1.117
16	18 50 3.51	2.2379	27 35 58.0	1.252
17	18 52 17.79	2.2379	27 34 38.9	1.387
18	18 54 32.06	2.2378	27 33 11.6	1.523
19	18 56 46.33	2.2378	27 31 36.2	1.657
20	18 59 0.59	2.2376	27 29 52.8	1.792
21	19 1 14.84	2.2373	27 28 1.2	1.927
22	19 3 29.07	2.2370	27 26 1.6	2.062
23	19 5 43.28	2.2366	S.27 23 53.8	2.197
	THURSDAY 20.			
0	19 7 57.46	2.2362	S.27 21 38.0	2.331
1	19 10 11.62	2.2357	27 19 14.1	2.466
2	19 12 25.74	2.2351	27 16 42.1	2.600
3	19 14 39.83	2.2345	27 14 2.1	2.734
4	19 16 53.88	2.2338	27 11 14.0	2.869
5	19 19 7.88	2.2330	27 8 17.8	3.003
6	19 21 21.84	2.2323	27 5 13.6	3.138
7	19 23 35.75	2.2314	27 2 1.3	3.272
8	19 25 49.61	2.2305	26 58 41.0	3.405
9	19 28 3.41	2.2295	26 55 12.7	3.538
10	19 30 17.15	2.2284	26 51 36.4	3.672
11	19 32 30.82	2.2273	26 47 52.1	3.805
12	19 34 44.43	2.2263	26 43 59.8	3.938
13	19 36 57.97	2.2251	26 39 59.5	4.071
14	19 39 11.44	2.2238	26 35 51.3	4.203
15	19 41 24.83	2.2225	26 31 35.2	4.335
16	19 43 38.14	2.2212	26 27 11.1	4.467
17	19 45 51.37	2.2198	26 22 39.1	4.598
18	19 48 4.51	2.2183	26 17 59.3	4.729
19	19 50 17.57	2.2168	26 13 11.6	4.861
20	19 52 30.53	2.2153	26 8 16.0	4.993
21	19 54 43.40	2.2138	26 3 12.5	5.123
22	19 56 56.18	2.2121	25 58 1.2	5.253
23	19 59 8.86	2.2104	25 52 42.1	5.383
24	20 1 21.43	2.2088	S.25 47 15.3	5.512

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 21.			
	h m s	s	° ′ ″	″
0	20 1 21.43	2.2088	S. 25 47 15.3	5.512
1	20 3 33.90	2.2070	25 41 40.7	5.641
2	20 5 46.27	2.2053	25 35 58.4	5.770
3	20 7 58.53	2.2034	25 30 8.3	5.898
4	20 10 10.68	2.2016	25 24 10.6	6.026
5	20 12 22.72	2.1997	25 18 5.2	6.153
6	20 14 34.64	2.1977	25 11 52.2	6.281
7	20 16 46.44	2.1958	25 5 31.5	6.407
8	20 18 58.13	2.1938	24 59 3.3	6.533
9	20 21 9.70	2.1918	24 52 27.5	6.660
10	20 23 21.15	2.1898	24 45 44.1	6.786
11	20 25 32.47	2.1877	24 38 53.2	6.911
12	20 27 43.67	2.1856	24 31 54.8	7.035
13	20 29 54.74	2.1835	24 24 49.0	7.159
14	20 32 5.69	2.1813	24 17 35.7	7.283
15	20 34 16.50	2.1791	24 10 15.0	7.407
16	20 36 27.18	2.1769	24 2 46.9	7.529
17	20 38 37.73	2.1748	23 55 11.5	7.652
18	20 40 48.15	2.1725	23 47 28.7	7.774
19	20 42 58.43	2.1703	23 39 38.6	7.895
20	20 45 8.58	2.1680	23 31 41.3	8.015
21	20 47 18.59	2.1658	23 23 36.8	8.136
22	20 49 28.47	2.1635	23 15 25.0	8.256
23	20 51 38.21	2.1612	S. 23 7 6.1	8.375
	SATURDAY 22.			
0	20 53 47.81	2.1588	S. 22 58 40.0	8.493
1	20 55 57.27	2.1566	22 50 6.9	8.611
2	20 58 6.60	2.1543	22 41 26.7	8.729
3	21 0 15.78	2.1519	22 32 39.4	8.847
4	21 2 24.83	2.1497	22 23 45.1	8.963
5	21 4 33.74	2.1473	22 14 43.9	9.078
6	21 6 42.50	2.1449	22 5 35.8	9.193
7	21 8 51.13	2.1427	21 56 20.7	9.308
8	21 10 59.62	2.1403	21 46 58.8	9.423
9	21 13 7.96	2.1379	21 37 30.0	9.536
10	21 15 16.17	2.1357	21 27 54.5	9.648
11	21 17 24.24	2.1333	21 18 12.2	9.761
12	21 19 32.17	2.1310	21 8 23.2	9.873
13	21 21 39.96	2.1287	20 58 27.5	9.983
14	21 23 47.61	2.1264	20 48 25.2	10.093
15	21 25 55.13	2.1242	20 38 16.3	10.203
16	21 28 2.51	2.1218	20 28 0.9	10.312
17	21 30 9.75	2.1196	20 17 38.9	10.421
18	21 32 16.86	2.1174	20 7 10.4	10.528
19	21 34 23.84	2.1152	19 56 35.5	10.635
20	21 36 30.68	2.1129	19 45 54.2	10.742
21	21 38 37.39	2.1108	19 35 6.5	10.848
22	21 40 43.97	2.1086	19 24 12.5	10.952
23	21 42 50.42	2.1064	19 13 12.3	11.056
24	21 44 56.74	2.1043	S. 19 2 5.8	11.160

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 23.			
	h m s	s	° ′ ″	″
0	21 44 56.74	2.1043	S. 19 2 5.8	11.160
1	21 47 2.94	2.1023	18 50 53.1	11.263
2	21 49 9.01	2.1002	18 39 34.3	11.364
3	21 51 14.96	2.0981	18 28 9.4	11.466
4	21 53 20.78	2.0961	18 16 38.4	11.567
5	21 55 26.49	2.0941	18 5 1.4	11.667
6	21 57 32.07	2.0921	17 53 18.4	11.766
7	21 59 37.54	2.0903	17 41 29.5	11.863
8	22 1 42.90	2.0883	17 29 34.8	11.961
9	22 3 48.14	2.0864	17 17 34.2	12.058
10	22 5 53.27	2.0846	17 5 27.8	12.155
11	22 7 58.29	2.0828	16 53 15.6	12.250
12	22 10 3.20	2.0810	16 40 57.8	12.344
13	22 12 8.01	2.0793	16 28 34.3	12.438
14	22 14 12.72	2.0776	16 16 5.2	12.532
15	22 16 17.32	2.0759	16 3 30.5	12.624
16	22 18 21.83	2.0743	15 50 50.3	12.715
17	22 20 26.24	2.0728	15 38 4.7	12.805
18	22 22 30.56	2.0713	15 25 13.7	12.895
19	22 24 34.79	2.0698	15 12 17.3	12.984
20	22 26 38.93	2.0683	14 59 15.6	13.072
21	22 28 42.99	2.0669	14 46 8.7	13.159
22	22 30 46.96	2.0655	14 32 56.5	13.246
23	22 32 50.85	2.0643	S. 14 19 39.2	13.331
	MONDAY 24.			
0	22 34 54.67	2.0630	S. 14 6 16.8	13.416
1	22 36 58.41	2.0618	13 52 49.3	13.499
2	22 39 2.08	2.0607	13 39 16.9	13.582
3	22 41 5.69	2.0596	13 25 39.5	13.664
4	22 43 9.23	2.0585	13 11 57.2	13.746
5	22 45 12.71	2.0575	12 58 10.0	13.826
6	22 47 16.13	2.0566	12 44 18.1	13.905
7	22 49 19.50	2.0558	12 30 21.4	13.983
8	22 51 22.82	2.0549	12 16 20.1	14.060
9	22 53 26.09	2.0541	12 2 14.2	14.137
10	22 55 29.31	2.0533	11 48 3.7	14.213
11	22 57 32.49	2.0527	11 33 48.7	14.287
12	22 59 35.63	2.0521	11 19 29.3	14.360
13	23 1 38.74	2.0516	11 5 5.5	14.433
14	23 3 41.82	2.0511	10 50 37.3	14.505
15	23 5 44.87	2.0506	10 36 4.9	14.575
16	23 7 47.89	2.0502	10 21 28.3	14.645
17	23 9 50.89	2.0499	10 6 47.5	14.714
18	23 11 53.88	2.0498	9 52 2.6	14.782
19	23 13 56.86	2.0496	9 37 13.7	14.848
20	23 15 59.83	2.0495	9 22 20.9	14.913
21	23 18 2.80	2.0494	9 7 24.1	14.978
22	23 20 5.76	2.0494	8 52 23.5	15.042
23	23 22 8.73	2.0495	8 37 19.1	15.104
24	23 24 11.70	2.0497	S. 8 22 11.0	15.165

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 25.			
	h m s	s	° ′ ″	″
0	23 24 11.70	2.0497	S. 8 22 11.0	15.165
1	23 26 14.69	2.0499	8 6 59.3	15.225
2	23 28 17.69	2.0502	7 51 44.0	15.284
3	23 30 20.71	2.0505	7 36 25.2	15.343
4	23 32 23.75	2.0509	7 21 2.9	15.399
5	23 34 26.82	2.0515	7 5 37.3	15.454
6	23 36 29.93	2.0521	6 50 8.4	15.509
7	23 38 33.07	2.0527	6 34 36.2	15.563
8	23 40 36.25	2.0534	6 19 0 8	15.615
9	23 42 39.48	2.0543	6 3 22.4	15.666
10	23 44 42.76	2.0551	5 47 40.9	15.717
11	23 46 46.09	2.0559	5 31 56.4	15.765
12	23 48 49.47	2.0569	5 16 9.1	15.812
13	23 50 52.92	2.0581	5 0 19.0	15.858
14	23 52 56.44	2.0593	4 44 26.1	15.903
15	23 55 0.03	2.0605	4 28 30.6	15.947
16	23 57 3.70	2.0618	4 12 32.5	15.989
17	23 59 7.45	2.0632	3 56 31.9	16.030
18	0 1 11.28	2.0647	3 40 28.9	16.070
19	0 3 15.21	2.0663	3 24 23.5	16.109
20	0 5 19.23	2.0678	3 8 15.8	16.147
21	0 7 23.35	2.0696	2 52 5.9	16.183
22	0 9 27.58	2.0713	2 35 53.9	16.217
23	0 11 31.91	2.0732	S. 2 19 39.9	16.250
	WEDNESDAY 26.			
0	0 13 36.36	2.0751	S. 2 3 23.9	16.282
1	0 15 40.92	2.0771	1 47 6.0	16.313
2	0 17 45.61	2.0793	1 30 46.4	16.341
3	0 19 50.43	2.0814	1 14 25.1	16.369
4	0 21 55.38	2.0837	0 58 2.1	16.396
5	0 24 0.47	2.0860	0 41 37.6	16.420
6	0 26 5.70	2.0883	0 25 11.7	16.443
7	0 28 11.07	2.0908	S. 0 8 44.4	16.465
8	0 30 16.60	2.0935	N. 0 7 44.2	16.486
9	0 32 22.29	2.0962	0 24 13.9	16.505
10	0 34 28.14	2.0988	0 40 44.7	16.522
11	0 36 34.15	2.1017	0 57 16.5	16.538
12	0 38 40.34	2.1046	1 13 49.3	16.553
13	0 40 46.70	2.1076	1 30 22.8	16.565
14	0 42 53.25	2.1108	1 46 57.1	16.577
15	0 44 59.99	2.1138	2 3 32.0	16.586
16	0 47 6.91	2.1170	2 20 7.4	16.594
17	0 49 14.03	2.1203	2 36 43.3	16.601
18	0 51 21.35	2.1238	2 53 19.5	16.605
19	0 53 28.88	2.1273	3 9 55.9	16.608
20	0 55 36.62	2.1308	3 26 32.5	16.610
21	0 57 44.58	2.1345	3 43 9.1	16.610
22	0 59 52.76	2.1383	3 59 45.7	16.608
23	1 2 1.17	2.1421	4 16 22.1	16.604
24	1 4 9.81	2.1459	N. 4 32 58.2	16.599

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 27.			
	h m s	s	° ′ ″	″
0	1 4 9.81	2.1459	N. 4 32 58.2	16.599
1	1 6 18.68	2.1499	4 49 34.0	16.592
2	1 8 27.80	2.1540	5 6 9.3	16.583
3	1 10 37.16	2.1581	5 22 44.0	16.573
4	1 12 46.77	2.1623	5 39 18.1	16.562
5	1 14 56.64	2.1667	5 55 51.4	16.548
6	1 17 6.77	2.1710	6 12 23.8	16.531
7	1 19 17.16	2.1754	6 28 55.1	16.513
8	1 21 27.82	2.1800	6 45 25.4	16.494
9	1 23 38.76	2.1846	7 1 54.4	16.473
10	1 25 49.97	2.1893	7 18 22.1	16.449
11	1 28 1.47	2.1941	7 34 48.3	16.424
12	1 30 13.26	2.1989	7 51 13.0	16.397
13	1 32 25.34	2.2038	8 7 36.0	16.368
14	1 34 37.72	2.2089	8 23 57.2	16.337
15	1 36 50.41	2.2140	8 40 16.5	16.305
16	1 39 3.40	2.2191	8 56 33.8	16.271
17	1 41 16.70	2.2243	9 12 49.0	16.234
18	1 43 30.32	2.2297	9 29 1.9	16.195
19	1 45 44.26	2.2350	9 45 12.4	16.154
20	1 47 58.52	2.2404	10 1 20.4	16 112
21	1 50 13.11	2.2460	10 17 25.8	16.068
22	1 52 28.04	2.2516	10 33 28.5	16.021
23	1 54 43.30	2.2573	N. 10 49 28.3	15.973
	FRIDAY 28.			
0	1 56 58.91	2.2630	N. 11 5 25.2	15.923
1	1 59 14.86	2.2688	11 21 19.0	15.870
2	2 1 31.16	2.2747	11 37 9.6	15.815
3	2 3 47.82	2.2807	11 52 56.8	15.758
4	2 6 4.84	2.2866	12 8 40.5	15.699
5	2 8 22.21	2.2926	12 24 20.7	15.638
6	2 10 39.95	2.2988	12 39 57.1	15.575
7	2 12 58,06	2.3049	12 55 29.7	15.510
8	2 15 16.54	2.3111	13 10 58.3	15.443
9	2 17 35.39	2.3173	13 26 22.8	15.373
10	2 19 54.62	2.3237	13 41 43.1	15.302
11	2 22 14.23	2.3301	13 56 59.0	15.228
12	2 24 34.23	2.3366	14 12 10.4	15.152
13	2 26 54.62	2.3430	14 27 17.2	15.074
14	2 29 15.39	2.3495	14 42 19.3	14.994
15	2 31 36.56	2.3562	14 57 16.5	14.912
16	2 33 58.13	2.3628	15 12 8.7	14.827
17	2 36 20.09	2.3693	15 26 55.7	14.740
18	2 38 42.45	2.3761	15 41 37.5	14.652
19	2 41 5.22	2.3828	15 56 13.9	14.561
20	2 43 28.39	2.3896	16 10 44.8	14.468
21	2 45 51.97	2.3964	16 25 10.0	14.372
22	2 48 15.96	2.4032	16 39 29.4	14.274
23	2 50 40.35	2.4100	16 53 42.9	14.175
24	2 53 5.16	2.4169	N. 17 7 50.4	14.073

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 29.			
	h m s	s	° ′ ″	″
0	2 53 5.16	2.4169	N.17 7 50.4	14.073
1	2 55 30.38	2.4238	17 21 51.7	13.969
2	2 57 56.01	2.4307	17 35 46.7	13.862
3	3 0 22.06	2.4376	17 49 35.2	13.753
4	3 2 48.52	2.4445	18 3 17.1	13.643
5	3 5 15.40	2.4515	18 16 52.3	13.530
6	3 7 42.70	2.4585	18 30 20.7	13.415
7	3 10 10.42	2.4654	18 43 42.1	13.298
8	3 12 38.55	2.4723	18 56 56.4	13.178
9	3 15 7.10	2.4793	19 10 3.5	13.057
10	3 17 36.07	2.4863	19 23 3.3	12.934
11	3 20 5.45	2.4932	19 35 55.6	12.808
12	3 22 35.25	2.5002	19 48 40.2	12.679
13	3 25 5.47	2.5071	20 1 17.1	12.550
14	3 27 36.10	2.5139	20 13 46.2	12.418
15	3 30 7.14	2.5208	20 26 7.3	12.283
16	3 32 38.60	2.5277	20 38 20.2	12.147
17	3 35 10.47	2.5345	20 50 24.9	12.008
18	3 37 42.74	2.5413	21 2 21.2	11.868
19	3 40 15.42	2.5480	21 14 9.0	11.726
20	3 42 48.50	2.5548	21 25 48.3	11.582
21	3 45 21.99	2.5614	21 37 18.8	11.434
22	3 47 55.87	2.5680	21 48 40.4	11.285
23	3 50 30.15	2.5746	N.21 59 53.0	11.135
	SUNDAY 30.			
0	3 53 4.82	2.5811	N.22 10 56.6	10.983
1	3 55 39.88	2.5876	22 21 50.9	10.828
2	3 58 15.33	2.5939	22 32 35.9	10.672
3	4 0 51.15	2.6002	22 43 11.5	10.513
4	4 3 27.35	2.6064	22 53 37.5	10.353
5	4 6 3.92	2.6126	23 3 53.8	10.191
6	4 8 40.86	2.6187	23 14 0.4	10.028
7	4 11 18.16	2.6247	23 23 57.1	9.862
8	4 13 55.82	2.6306	23 33 43.8	9.694
9	4 16 33.83	2.6364	23 43 20.4	9.525
10	4 19 12.19	2.6421	23 52 46.8	9.355
11	4 21 50.88	2.6477	24 2 3.0	9.183
12	4 24 29.91	2.6533	24 11 8.7	9.008
13	4 27 9.27	2.6587	24 20 3.9	8.833
14	4 29 48.95	2.6639	24 28 48.6	8.656
15	4 32 28.94	2.6691	24 37 22.6	8.477
16	4 35 9.24	2.6742	24 45 45.8	8.296
17	4 37 49.84	2.6791	24 53 58.1	8.114
18	4 40 30.73	2.6838	25 1 59.5	7.931
19	4 43 11.90	2.6885	25 9 49.8	7.747
20	4 45 53.35	2.6930	25 17 29.1	7.562
21	4 48 35.06	2.6974	25 24 57.2	7.374
22	4 51 17.04	2.7017	25 32 14.0	7.186
23	4 53 59.27	2.7058	25 39 19.5	6.996
24	4 56 41.74	2.7098	N.25 46 13.5	6.805

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY, MAY 1.			
	h m s	s	° ′ ″	″
0	4 56 41.74	2.7098	N.25 46 13.5	6.805

PHASES OF THE MOON.

			d	h	m
☽	First Quarter . . .	Apr.	5	17	54.9
○	Full Moon		13	2	36.6
☾	Last Quarter		21	6	35.7
●	New Moon		28	10	25.0

			d	h
☾	Perigee	Apr.	1	20.2
☾	Apogee		17	18.7
☾	Perigee		29	21.0

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	IIIh	P. L. of Diff.	VIh	P. L. of Diff.	IXh	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	26 27 52	2491	28 9 18	2487	29 50 50	2483	31 32 27	2480
	Pollux	E.	75 1 13	2167	73 11 55	2165	71 22 34	2164	69 33 11	2163
	Regulus	E.	111 29 26	2180	109 40 29	2178	107 51 28	2176	106 2 23	2174
2	Sun	W.	40 1 9	2478	41 42 54	2479	43 24 37	2481	45 6 18	2483
	Pollux	E.	60 26 13	2166	58 36 54	2168	56 47 38	2170	54 58 26	2173
	Regulus	E.	96 56 52	2176	95 7 49	2178	93 18 50	2181	91 29 54	2184
3	Sun	W.	53 33 38	2502	55 14 49	2507	56 55 52	2512	58 36 48	2517
	Pollux	E.	45 53 42	2194	44 5 5	2199	42 16 36	2205	40 28 16	2211
	Regulus	E.	82 26 27	2204	80 38 5	2209	78 49 51	2214	77 1 45	2220
4	Sun	W.	66 59 22	2551	68 39 24	2559	70 19 15	2566	71 58 56	2574
	Pollux	E.	31 28 57	2245	29 41 37	2253	27 54 29	2262	26 7 33	2271
	Regulus	E.	68 3 34	2254	66 16 27	2262	64 29 31	2270	62 42 47	2278
	Spica	E.	122 6 50	2250	120 19 37	2257	118 32 34	2264	116 45 41	2271
5	Sun	W.	80 14 35	2616	81 53 8	2626	83 31 28	2635	85 9 36	2644
	Aldebaran	W.	27 58 46	2486	29 40 19	2475	31 22 8	2468	33 4 7	2464
	Regulus	E.	53 52 10	2322	52 6 42	2331	50 21 27	2340	48 36 26	2350
	Spica	E.	107 54 2	2310	106 8 17	2318	104 22 44	2326	102 37 23	2335
	Jupiter	E.	127 38 23	2272	125 51 43	2281	124 5 15	2289	122 18 59	2298
6	Sun	W.	93 17 11	2690	94 54 4	2699	96 30 45	2709	98 7 13	2719
	Aldebaran	W.	41 34 52	2462	43 16 58	2465	44 59 0	2469	46 40 57	2473
	Regulus	E.	39 55 4	2403	38 11 34	2415	36 28 21	2427	34 45 25	2440
	Spica	E.	93 53 43	2378	92 9 37	2387	90 25 43	2396	88 42 2	2405
	Jupiter	E.	113 30 46	2340	111 45 45	2349	110 0 57	2357	108 16 21	2366
7	Sun	W.	106 6 22	2766	107 41 34	2775	109 16 34	2785	110 51 21	2795
	Aldebaran	W.	55 8 56	2502	56 50 7	2509	58 31 8	2515	60 12 0	2522
	Regulus	E.	26 15 31	2515	24 34 38	2534	22 54 12	2556	21 14 16	2581
	Spica	E.	80 6 50	2450	78 24 26	2458	76 42 14	2467	75 0 15	2476
	Jupiter	E.	99 36 28	2410	97 53 7	2419	96 9 59	2427	94 27 3	2436
	Antares	E.	126 0 13	2445	124 17 42	2453	122 35 23	2462	120 53 17	2471
8	Sun	W.	118 42 10	2843	120 15 42	2852	121 49 3	2861	123 22 12	2870
	Aldebaran	W.	68 33 53	2559	70 13 44	2567	71 53 25	2575	73 32 54	2583
	Pollux	W.	24 17 32	2522	25 58 15	2530	27 38 48	2538	29 19 9	2545
	Spica	E.	66 33 31	2522	64 52 48	2531	63 12 18	2540	61 32 0	2549
	Jupiter	E.	85 55 28	2480	84 13 46	2488	82 32 15	2497	80 50 57	2505
	Antares	E.	112 25 50	2515	110 44 57	2523	109 4 16	2532	107 23 47	2541
9	Aldebaran	W.	81 47 38	2623	83 26 2	2632	85 4 14	2640	86 42 15	2648
	Pollux	W.	37 38 12	2585	39 17 27	2593	40 56 30	2601	42 35 23	2610
	Spica	E.	53 13 39	2594	51 34 36	2603	49 55 46	2612	48 17 8	2622
	Jupiter	E.	72 27 25	2548	70 47 18	2556	69 7 23	2564	67 27 39	2573
	Antares	E.	99 4 22	2583	97 25 4	2592	95 45 58	2601	94 7 4	2609
10	Aldebaran	W.	94 49 28	2692	96 26 19	2700	98 2 59	2709	99 39 27	2718
	Pollux	W.	50 46 55	2652	52 24 40	2660	54 2 13	2669	55 39 35	2677
	Regulus	W.	14 53 54	2841	16 27 29	2817	18 1 35	2800	19 36 3	2788

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	33 14 8	2478	34 55 52	2477	36 37 37	2477	38 19 23	2477
	Pollux	E.	67 43 47	2162	65 54 22	2163	64 4 58	2163	62 15 35	2164
	Regulus	E.	104 13 16	2174	102 24 9	2174	100 35 3	2174	98 45 57	2175
2	Sun	W.	46 47 55	2186	48 29 28	2489	50 10 57	2493	51 52 20	2497
	Pollux	E.	53 9 18	2176	51 20 15	2180	49 31 18	2184	47 42 27	2189
	Regulus	E.	89 41 1	2187	87 52 14	2190	86 3 32	2194	84 14 56	2199
3	Sun	W.	60 17 37	2523	61 58 17	2530	63 38 48	2537	65 19 10	2544
	Pollux	E.	38 40 4	2217	36 52 2	2224	35 4 10	2231	33 16 28	2238
	Regulus	E.	75 13 47	2227	73 25 59	2233	71 38 20	2240	69 50 52	2247
4	Sun	W.	73 38 27	2583	75 17 46	2591	76 56 54	2599	78 35 50	2607
	Pollux	E.	24 20 51	2280	22 34 22	2290	20 48 8	2300	19 2 9	2312
	Regulus	E.	60 56 14	2286	59 9 54	2295	57 23 47	2303	55 37 52	2312
	Spica	E.	114 58 59	2279	113 12 28	2286	111 26 8	2294	109 39 59	2302
5	Sun	W.	86 47 32	2653	88 25 15	2662	90 2 46	2671	91 40 5	2681
	Aldebaran	W.	34 46 11	2460	36 28 20	2458	38 10 32	2459	39 52 43	2460
	Regulus	E.	46 51 40	2360	45 7 8	2371	43 22 51	2382	41 38 50	2392
	Spica	E.	100 52 14	2344	99 7 18	2352	97 22 34	2360	95 38 2	2369
	Jupiter	E.	120 32 56	2306	118 47 5	2314	117 1 26	2323	115 16 0	2331
6	Sun	W.	99 43 28	2729	101 19 30	2738	102 55 20	2747	104 30 57	2756
	Aldebaran	W.	48 22 48	2478	50 4 32	2484	51 46 8	2489	53 27 36	2495
	Regulus	E.	33 2 47	2453	31 20 28	2467	29 38 28	2482	27 56 49	2498
	Spica	E.	86 58 34	2414	85 15 19	2423	83 32 17	2432	81 49 27	2441
	Jupiter	E.	106 31 57	2375	104 47 46	2384	103 3 48	2392	101 20 2	2401
7	Sun	W.	112 25 56	2805	114 0 18	2814	115 34 28	2824	117 8 25	2833
	Aldebaran	W.	61 52 43	2529	63 33 15	2536	65 13 38	2543	66 53 51	2551
	Regulus	E.	19 34 55	2610	17 56 14	2646	16 18 21	2691	14 41 29	2750
	Spica	E.	73 18 29	2485	71 36 55	2495	69 55 35	2504	68 14 27	2513
	Jupiter	E.	92 44 20	2445	91 1 49	2453	89 19 30	2462	87 37 23	2471
	Antares	E.	119 11 23	2480	117 29 41	2489	115 48 12	2497	114 6 55	2506
8	Sun	W.	124 55 9	2880	126 27 53	2889	128 0 26	2899	129 32 46	2908
	Aldebaran	W.	75 12 13	2591	76 51 21	2599	78 30 17	2607	80 9 3	2615
	Pollux	W.	30 59 20	2553	32 39 19	2561	34 19 8	2569	35 58 46	2577
	Spica	E.	59 51 55	2558	58 12 2	2567	56 32 22	2576	54 52 54	2585
	Jupiter	E.	79 9 51	2514	77 28 57	2522	75 48 15	2530	74 7 44	2539
	Antares	E.	105 43 30	2550	104 3 26	2558	102 23 33	2566	100 43 52	2574
9	Aldebaran	W.	88 20 5	2657	89 57 43	2665	91 35 10	2674	93 12 25	2683
	Pollux	W.	44 14 4	2618	45 52 34	2627	47 30 52	2635	49 8 59	2643
	Spica	E.	46 38 43	2632	45 0 31	2641	43 22 32	2651	41 44 46	2660
	Jupiter	E.	65 48 7	2582	64 8 47	2590	62 29 38	2598	60 50 40	2607
	Antares	E.	92 28 21	2618	90 49 50	2626	89 11 31	2635	87 33 23	2643
10	Aldebaran	W.	101 15 44	2727	102 51 48	2735	104 27 41	2744	106 3 22	2754
	Pollux	W.	57 16 46	2685	58 53 46	2694	60 30 34	2702	62 7 11	2710
	Regulus	W.	21 10 47	2781	22 45 40	2777	24 20 38	2775	25 55 38	2776

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
10	Spica	E.	40 7 13	2670	38 29 53	2681	36 52 47	2691	35 15 55	2702
	JUPITER	E.	59 11 54	2615	57 33 19	2624	55 54 56	2632	54 16 44	2640
	Antares	E.	85 55 26	2652	84 17 41	2660	82 40 8	2669	81 2 46	2677
11	Aldebaran	W.	107 38 50	2763	109 14 6	2773	110 49 9	2782	112 24 0	2792
	Pollux	W.	63 43 37	2719	65 19 52	2728	66 55 55	2736	68 31 47	2744
	Regulus	W.	27 30 37	2778	29 5 34	2781	30 40 28	2784	32 15 17	2788
	Spica	E.	27 15 15	2761	25 39 56	2775	24 4 55	2790	22 30 13	2806
	JUPITER	E.	46 8 38	2683	44 31 35	2692	42 54 44	2700	41 18 4	2709
	Antares	E.	72 58 47	2720	71 22 34	2729	69 46 32	2737	68 10 41	2745
	α Aquilæ	E.	117 33 33	3838	116 19 10	3815	115 4 23	3795	113 49 16	3778
12	Pollux	W.	76 28 20	2787	78 3 5	2795	79 37 39	2804	81 12 2	2812
	Regulus	W.	40 7 46	2817	41 41 52	2823	43 15 50	2830	44 49 39	2837
	JUPITER	E.	33 17 37	2753	31 42 7	2761	30 6 48	2770	28 31 41	2779
	Antares	E.	60 14 17	2789	58 39 34	2798	57 5 3	2806	55 30 43	2815
	α Aquilæ	E.	107 29 51	3721	106 13 26	3714	104 56 53	3709	103 40 15	3706
13	Pollux	W.	89 1 13	2854	90 34 31	2863	92 7 37	2871	93 40 33	2879
	Regulus	W.	52 36 26	2873	54 9 19	2881	55 42 2	2888	57 14 36	2896
	Antares	E.	47 41 49	2857	46 8 35	2866	44 35 33	2875	43 2 42	2883
	α Aquilæ	E.	97 16 37	3706	95 59 56	3710	94 43 19	3714	93 26 47	3719
14	Pollux	W.	101 22 37	2920	102 54 31	2927	104 26 15	2935	105 57 50	2942
	Regulus	W.	64 54 58	2934	66 26 34	2942	67 58 0	2949	69 29 18	2956
	Antares	E.	35 21 11	2926	33 49 25	2934	32 17 50	2942	30 46 25	2951
	α Aquilæ	E.	87 5 52	3761	85 50 9	3772	84 34 38	3785	83 19 20	3798
	Fomalhaut	E.	117 12 24	3140	115 45 3	3143	114 17 46	3146	112 50 32	3149
15	Pollux	W.	113 33 21	2979	115 4 0	2985	116 34 31	2992	118 4 54	2999
	Regulus	W.	77 3 29	2991	78 33 53	2998	80 4 8	3004	81 34 16	3010
	Spica	W.	23 5 12	3030	24 34 48	3032	26 4 22	3034	27 33 53	3036
	α Aquilæ	E.	77 6 30	3877	75 52 47	3896	74 39 23	3916	73 26 19	3937
	Fomalhaut	E.	105 35 18	3167	104 8 29	3171	102 41 45	3176	101 15 7	3180
	α Pegasi	E.	124 25 14	3531	123 5 24	3520	121 45 22	3510	120 25 9	3501
16	Regulus	W.	89 3 1	3039	90 32 25	3044	92 1 42	3049	93 30 54	3054
	Spica	W.	35 0 41	3052	36 29 50	3055	37 58 55	3058	39 27 56	3061
	JUPITER	W.	16 23 51	3001	17 54 3	3004	19 24 11	3007	20 54 15	3010
	α Aquilæ	E.	67 26 42	4063	66 16 4	4092	65 5 54	4122	63 56 14	4154
	Fomalhaut	E.	94 3 16	3203	92 37 11	3208	91 11 11	3213	89 45 17	3218
	α Pegasi	E.	113 41 50	3468	112 20 50	3464	110 59 45	3461	109 38 37	3457
17	Regulus	W.	100 55 31	3074	102 24 12	3077	103 52 50	3080	105 21 24	3082
	Spica	W.	46 52 3	3076	48 20 42	3078	49 49 19	3080	51 17 53	3081
	JUPITER	W.	28 23 45	3023	29 53 29	3025	31 23 10	3027	32 52 49	3029
	α Aquilæ	E.	58 16 26	4355	57 10 23	4402	56 5 3	4452	55 0 29	4507
	Fomalhaut	E.	82 37 10	3240	81 11 48	3245	79 46 32	3249	78 21 21	3253
	α Pegasi	E.	102 52 11	3447	101 30 48	3446	100 9 23	3445	98 47 57	3445
	SUN	E.	136 46 48	3435	135 25 11	3438	134 3 37	3440	132 42 6	3442
18	Regulus	W.	112 43 38	3090	114 12 0	3091	115 40 21	3090	117 8 43	3090

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
10	Spica	E.	33 39 17	2713	32 2 54	2724	30 26 45	2735	28 50 52	2747
	JUPITER	E.	52 38 44	2649	51 0 55	2657	49 23 18	2666	47 45 52	2675
	Antares	E.	79 25 35	2686	77 48 36	2694	76 11 48	2703	74 35 12	2711
11	Aldebaran	W.	113 58 38	2802	115 33 3	2812	117 7 15	2821	118 41 15	2831
	Pollux	W.	70 7 28	2753	71 42 58	2761	73 18 16	2770	74 53 24	2779
	Regulus	W.	33 50 1	2793	35 24 38	2798	36 59 8	2804	38 33 31	2810
	Spica	E.	20 55 53	2825	19 21 57	2846	17 48 29	2871	16 15 33	2901
	JUPITER	E.	39 41 36	2717	38 5 19	2726	36 29 14	2735	34 53 20	2744
	Antares	E.	66 35 1	2754	64 59 33	2763	63 24 16	2772	61 49 11	2780
	α Aquilæ	E.	112 33 51	3763	111 18 10	3749	110 2 15	3738	108 46 8	3728
12	Pollux	W.	82 46 14	2821	84 20 15	2829	85 54 5	2837	87 27 44	2845
	Regulus	W.	46 23 19	2844	47 56 50	2852	49 30 11	2859	51 3 23	2866
	JUPITER	E.	26 56 45	2738	25 22 2	2798	23 47 31	2807	22 13 12	2817
	Antares	E.	53 56 34	2823	52 22 37	2831	50 48 50	2840	49 15 14	2848
	α Aquilæ	E.	102 23 34	3704	101 6 50	3703	99 50 6	3702	98 33 21	3703
13	Pollux	W.	95 13 19	2887	96 45 54	2895	98 18 19	2904	99 50 33	2912
	Regulus	W.	58 47 0	2904	60 19 14	2912	61 51 18	2919	63 23 13	2927
	Antares	E.	41 30 2	2892	39 57 33	2901	38 25 15	2909	36 53 8	2917
	α Aquilæ	E.	92 10 20	3726	90 54 0	3734	89 37 49	3742	88 21 46	3751
14	Pollux	W.	107 29 15	2950	109 0 30	2958	110 31 36	2965	112 2 33	2972
	Regulus	W.	71 0 26	2963	72 31 25	2970	74 2 15	2977	75 32 56	2984
	Antares	E.	29 15 11	2960	27 44 8	2969	26 13 16	2978	24 42 35	2987
	α Aquilæ	E.	82 4 15	3812	80 49 25	3826	79 34 50	3842	78 20 31	3859
	Fomalhaut	E.	111 23 21	3152	109 56 14	3155	108 29 11	3159	107 2 12	3163
15	Pollux	W.	119 35 8	3005	121 5 14	3011	122 35 13	3017	124 5 4	3023
	Regulus	W.	83 4 16	3016	84 34 8	3022	86 3 53	3028	87 33 30	3034
	Spica	W.	29 3 22	3039	30 32 47	3041	32 2 9	3044	33 31 27	3048
	α Aquilæ	E.	72 13 36	3959	71 1 16	3982	69 49 19	4008	68 37 47	4035
	Fomalhaut	E.	99 48 34	3184	98 22 6	3189	96 55 44	3193	95 29 27	3198
	α Pegasi	E.	119 4 46	3493	117 44 14	3486	116 23 33	3479	115 2 45	3473
16	Regulus	W.	95 0 0	3059	96 29 0	3063	97 57 55	3067	99 26 45	3070
	Spica	W.	40 56 53	3065	42 25 46	3068	43 54 35	3070	45 23 21	3073
	JUPITER	W.	22 24 16	3013	23 54 13	3015	25 24 7	3018	26 53 58	3021
	α Aquilæ	E.	62 47 4	4189	61 38 28	4228	60 30 29	4269	59 23 8	4311
	Fomalhaut	E.	88 19 29	3222	86 53 46	3227	85 28 9	3231	84 2 37	3236
	α Pegasi	E.	108 17 25	3454	106 56 10	3452	105 34 53	3450	104 13 33	3448
17	Regulus	W.	106 49 55	3084	108 18 24	3086	109 46 50	3087	111 15 15	3089
	Spica	W.	52 46 26	3082	54 14 57	3084	55 43 26	3085	57 11 54	3085
	JUPITER	W.	34 22 26	3030	35 52 1	3031	37 21 34	3032	38 51 6	3033
	α Aquilæ	E.	53 56 43	4565	52 53 48	4628	51 51 47	4695	50 50 43	4767
	Fomalhaut	E.	76 56 14	3257	75 31 13	3261	74 6 16	3265	72 41 24	3269
	α Pegasi	E.	97 26 31	3444	96 5 4	3443	94 43 36	3443	93 22 8	3443
	SUN	E.	131 20 37	3444	129 59 11	3445	128 37 46	3446	127 16 22	3447
18	Regulus	W.	118 37 5	3089	120 5 28	3088	121 33 51	3087	123 2 16	3085

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
18	Spica	W.	58 40 22	3085	60 8 50	3085	61 37 18	3084	63 5 47	3083
	JUPITER	W.	40 20 38	3034	41 50 9	3033	43 19 41	3032	44 49 13	3031
	α Aquilæ	E.	49 50 39	4845	48 51 40	4929	47 53 49	5019	46 57 9	5117
	Fomalhaut	E.	71 16 37	3273	69 51 54	3277	68 27 16	3281	67 2 42	3285
	α Pegasi	E.	92 0 40	3443	90 39 12	3442	89 17 43	3443	87 56 15	3442
	SUN	E.	125 54 59	3448	124 33 37	3447	123 12 15	3447	121 50 52	3447
19	Spica	W.	70 28 38	3072	71 57 21	3069	73 26 9	3065	74 55 1	3061
	JUPITER	W.	52 17 22	3021	53 47 8	3018	55 16 59	3014	56 46 55	3009
	Antares	W.	24 34 45	3078	26 3 21	3073	27 32 4	3068	29 0 53	3063
	Fomalhaut	E.	60 1 2	3305	58 36 56	3310	57 12 56	3315	55 49 2	3320
	α Pegasi	E.	81 8 52	3443	79 47 24	3443	78 25 56	3444	77 4 29	3444
	SUN	E.	115 3 34	3435	113 41 58	3432	112 20 18	3428	110 58 33	3423
20	Spica	W.	82 20 51	3033	83 50 23	3026	85 20 4	3019	86 49 53	3011
	JUPITER	W.	64 18 2	2982	65 48 37	2975	67 19 21	2968	68 50 14	2960
	Antares	W.	36 26 41	3032	37 56 15	3025	39 25 57	3017	40 55 49	3009
	Fomalhaut	E.	48 51 9	3353	47 27 59	3363	46 5 0	3374	44 42 13	3386
	α Pegasi	E.	70 17 25	3449	68 56 4	3451	67 34 45	3453	66 13 29	3455
	SUN	E.	104 8 20	3393	102 45 56	3386	101 23 23	3378	100 0 41	3369
21	Spica	W.	94 21 36	2965	95 52 32	2955	97 23 41	2944	98 55 4	2933
	JUPITER	W.	76 27 17	2914	77 59 17	2904	79 31 31	2894	81 3 58	2882
	Antares	W.	48 27 52	2962	49 58 53	2951	51 30 7	2939	53 1 36	2928
	Fomalhaut	E.	37 52 31	3479	36 31 43	3508	35 11 27	3541	33 51 48	3579
	α Pegasi	E.	59 28 5	3479	58 7 17	3486	56 46 36	3494	55 26 5	3504
	SUN	E.	93 4 33	3319	91 40 44	3307	90 16 41	3295	88 52 25	3283
22	Spica	W.	106 35 42	2871	108 8 38	2857	109 41 52	2843	111 15 24	2828
	JUPITER	W.	88 50 4	2819	90 24 7	2806	91 58 27	2792	93 33 5	2778
	Antares	W.	60 42 48	2865	62 15 52	2851	63 49 14	2836	65 22 55	2822
	α Pegasi	E.	48 46 48	3580	47 27 52	3603	46 9 21	3630	44 51 19	3661
	SUN	E.	81 47 16	3215	80 21 25	3200	78 55 16	3184	77 28 48	3169
23	JUPITER	W.	101 31 10	2700	103 7 49	2684	104 44 50	2668	106 22 13	2651
	Antares	W.	73 16 9	2744	74 51 50	2728	76 27 53	2711	78 4 18	2694
	SUN	E.	70 11 38	3085	68 43 10	3067	67 14 20	3049	65 45 8	3031
24	Antares	W.	86 12 10	2607	87 50 56	2589	89 30 6	2571	91 9 41	2553
	α Aquilæ	W.	47 34 2	4488	48 38 5	4372	49 43 52	4265	50 51 17	4166
	SUN	E.	58 13 22	2936	56 41 49	2917	55 9 52	2898	53 37 30	2878
25	Antares	W.	99 33 53	2462	101 16 0	2444	102 58 32	2426	104 41 30	2408
	α Aquilæ	W.	56 50 5	3764	58 5 45	3699	59 22 33	3636	60 40 28	3576
	SUN	E.	45 49 21	2780	44 14 27	2760	42 39 7	2741	41 3 22	2722
26	Antares	W.	113 22 35	2322	115 8 2	2305	116 53 54	2289	118 40 9	2274
	α Aquilæ	W.	67 25 2	3332	68 48 37	3292	70 12 58	3253	71 38 4	3218
	SUN	E.	32 58 15	2629	31 19 59	2611	29 41 19	2594	28 2 15	2577
30	SUN	W.	21 53 47	2332	23 39 0	2335	25 24 9	2337	27 9 15	2340
	Pollux	E.	51 12 13	2046	49 19 50	2048	47 27 30	2051	45 35 14	2054

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
18	Spica	W.	64 34 17	3082	66 2 48	3080	67 31 22	3078	68 59 58	3075
	JUPITER	W.	46 18 47	3030	47 48 22	3028	49 17 59	3026	50 47 39	3024
	α Aquilæ	E.	46 1 45	5226	45 7 43	5345	44 15 8	5473	43 24 5	5613
	Fomalhaut	E.	65 38 13	3289	64 13 48	3293	62 49 28	3297	61 25 13	3301
	α Pegasi	E.	86 34 46	3443	85 13 18	3442	83 51 49	3442	82 30 20	3443
	SUN	E.	120 29 29	3445	119 8 4	3443	117 46 37	3441	116 25 7	3438
19	Spica	W.	76 23 58	3056	77 53 1	3051	79 22 10	3045	80 51 27	3039
	JUPITER	W.	58 16 56	3005	59 47 2	3000	61 17 15	2994	62 47 35	2988
	Antares	W.	30 29 48	3057	31 58 50	3051	33 27 59	3045	34 57 16	3039
	Fomalhaut	E.	54 25 13	3325	53 1 30	3332	51 37 55	3338	50 14 28	3345
	α Pegasi	E.	75 43 2	3445	74 21 36	3446	73 0 11	3447	71 38 47	3448
	SUN	E.	109 36 43	3418	108 14 47	3413	106 52 45	3407	105 30 36	3400
20	Spica	W.	88 19 52	3003	89 50 1	2994	91 20 21	2985	92 50 52	2975
	JUPITER	W.	70 21 17	2952	71 52 30	2943	73 23 54	2934	74 55 29	2924
	Antares	W.	42 25 51	3000	43 56 4	2991	45 26 28	2981	46 57 4	2972
	Fomalhaut	E.	43 19 41	3400	41 57 24	3415	40 35 25	3433	39 13 46	3454
	α Pegasi	E.	64 52 15	3459	63 31 5	3463	62 10 0	3468	60 49 0	3473
	SUN	E.	98 37 49	3360	97 14 47	3351	95 51 34	3341	94 28 10	3330
21	Spica	W.	100 26 41	2921	101 58 33	2909	103 30 40	2897	105 3 3	2884
	JUPITER	W.	82 36 40	2870	84 9 37	2858	85 42 49	2845	87 16 18	2832
	Antares	W.	54 33 19	2916	56 5 17	2904	57 37 31	2891	59 10 1	2878
	Fomalhaut	E.	32 32 51	3625	31 14 44	3680	29 57 36	3745	28 41 36	3819
	α Pegasi	E.	54 5 45	3515	52 45 37	3528	51 25 43	3543	50 6 6	3560
	SUN	E.	87 27 54	3270	86 3 8	3257	84 38 7	3244	83 12 50	3230
22	Spica	W.	112 49 15	2814	114 23 24	2799	115 57 53	2784	117 32 42	2769
	JUPITER	W.	95 8 2	2763	96 43 19	2748	98 18 55	2732	99 54 52	2716
	Antares	W.	66 56 54	2807	68 31 13	2792	70 5 51	2776	71 40 50	2761
	α Pegasi	E.	43 33 50	3696	42 16 59	3737	41 0 51	3784	39 45 33	3838
	SUN	E.	76 2 2	3153	74 34 57	3136	73 7 31	3119	71 39 45	3102
23	JUPITER	W.	107 59 59	2634	109 38 8	2617	111 16 40	2600	112 55 35	2583
	Antares	W.	79 41 6	2677	81 18 17	2660	82 55 51	2642	84 33 49	2625
	SUN	E.	64 15 34	3012	62 45 36	2993	61 15 15	2974	59 44 30	2955
24	Antares	W.	92 49 41	2535	94 30 6	2517	96 10 56	2498	97 52 12	2480
	α Aquilæ	W.	52 0 15	4076	53 10 40	3991	54 22 28	3911	55 35 37	3834
	SUN	E.	52 4 43	2858	50 31 30	2839	48 57 53	2819	47 23 50	2799
25	Antares	W.	106 24 53	2391	108 8 41	2373	109 52 54	2356	111 37 32	2339
	α Aquilæ	W.	61 59 28	3522	63 19 28	3471	64 40 24	3422	66 2 16	3374
	SUN	E.	39 27 11	2703	37 50 34	2684	36 13 33	2665	34 36 6	2647
26	Antares	W.	120 26 47	2259	122 13 48	2244	124 1 10	2229	125 48 55	2214
	α Aquilæ	W.	73 3 52	3185	74 30 19	3154	75 57 25	3124	77 25 6	3096
	SUN	E.	26 22 48	2560	24 42 58	2543	23 2 45	2527	21 22 10	2513
30	SUN	W.	28 54 16	2344	30 39 11	2349	32 23 59	2355	34 8 39	2361
	Pollux	E.	43 43 4	2058	41 51 0	2063	39 59 3	2068	38 7 15	2074

AT GREENWICH APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Semi-diameter.	Sidereal Time of Semi-diameter Passing Meridian.	Equation of Time, to be Subtracted from Apparent Time.	Diff. for 1 Hour.
		h m s	s	° ′ ″	″	′ ″	s	m s	s
Mon.	1	2 30 18.79	+ 9.527	N.14 49 9.5	+45.93	15 54.05	65.97	2 51.92	0.328
Tues.	2	2 34 7.71	9.549	15 7 24.3	45.31	15 53.82	66.04	2 59.53	0.306
Wed.	3	2 37 57.16	9.571	15 25 24.1	44.67	15 53.60	66.12	3 6.62	0.284
Thur.	4	2 41 47.13	+ 9.593	15 43 8.5	+44.02	15 53.38	66.20	3 13.19	0.262
Frid.	5	2 45 37.64	9.615	16 0 37.2	43.36	15 53.15	66.28	3 19.22	0.240
Sat.	6	2 49 28.69	9.638	16 17 49.9	42.69	15 52.92	66.36	3 24.71	0.218
SUN.	7	2 53 20.29	+ 9.661	16 34 46.2	+42.00	15 52.70	66.45	3 29.66	0.195
Mon.	8	2 57 12.43	9.684	16 51 25.9	41.30	15 52.49	66.53	3 34.06	0.172
Tues.	9	3 1 5.12	9.707	17 7 48.7	40.59	15 52.28	66.61	3 37.91	0.149
Wed.	10	3 4 58.38	+ 9.730	17 23 54.3	+39.87	15 52.06	66.69	3 41.20	0.126
Thur.	11	3 8 52.20	9.754	17 39 42.4	39.14	15 51.85	66.78	3 43.93	0.102
Frid.	12	3 12 46.59	9.778	17 55 12.9	38.40	15 51.64	66.86	3 46.09	0.078
Sat.	13	3 16 41.56	+ 9.802	18 10 25.4	+37.64	15 51.44	66.94	3 47.67	0.054
SUN.	14	3 20 37.11	9.827	18 25 19.6	36.87	15 51.23	67.02	3 48.67	0.030
Mon.	15	3 24 33.24	9.851	18 39 55.2	36.09	15 51.02	67.10	3 49.10	0.006
Tues.	16	3 28 29.95	+ 9.875	18 54 12.0	+35.31	15 50.81	67.18	3 48.95	0.018
Wed.	17	3 32 27.23	9.899	19 8 9.8	34.51	15 50.60	67.26	3 48.23	0.042
Thur.	18	3 36 25.08	9.923	19 21 48.3	33.70	15 50.40	67.34	3 46.94	0.066
Frid.	19	3 40 23.51	+ 9.947	19 35 7.2	+32.87	15 50.21	67.42	3 45.07	0.090
Sat.	20	3 44 22.52	9.971	19 48 6.2	32.04	15 50.02	67.50	3 42.62	0.114
SUN.	21	3 48 22.10	9.995	20 0 45.1	31.20	15 49.84	67.58	3 39.60	0.138
Mon.	22	3 52 22.25	+ 10.018	20 13 3.7	+30.34	15 49.66	67.65	3 36.02	0.161
Tues.	23	3 56 22.95	10.041	20 25 1.6	29.47	15 49.48	67.72	3 31.89	0.184
Wed.	24	4 0 24.20	10.063	20 36 38.6	28.60	15 49.30	67.80	3 27.22	0.206
Thur.	25	4 4 25.98	+ 10.085	20 47 54.5	+27.72	15 49.12	67.88	3 22.01	0.228
Frid.	26	4 8 28.28	10.107	20 58 48.9	26.82	15 48.95	67.95	3 16.28	0.249
Sat.	27	4 12 31.09	10.128	21 9 21.7	25.91	15 48.79	68.02	3 10.05	0.270
SUN.	28	4 16 34.39	+ 10.148	21 19 32.6	+24.99	15 48.63	68.09	3 3.32	0.290
Mon.	29	4 20 38.16	10.167	21 29 21.3	24.06	15 48.48	68.15	2 56.12	0.309
Tues.	30	4 24 42.39	10.185	21 38 47.7	23.13	15 48.33	68.21	2 48.47	0.328
Wed.	31	4 28 47.06	10.203	21 47 51.6	22.19	15 48.19	68.27	2 40.38	0.346
Thur.	32	4 32 52.15	+ 10.220	N.21 56 32.7	+21.24	15 48.05	68.33	2 31.88	0.363

NOTE.—The mean time of semidiameter passing the meridian may be found by subtracting 0s.18 from the sidereal time.
The sign + prefixed to the hourly change of declination indicates that north declinations are increasing.

AT GREENWICH MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Equation of Time, to be Added to Mean Time.	Diff. for 1 Hour.	Sidereal Time, or Right Ascension of Mean Sun.
		h m s	s	° ′ ″	″	m s	s	h m s
Mon.	1	2 30 19.24	+ 9.528	N.14 49 11.7	+45.93	2 51.94	+ 0.328	2 33 11.18
Tues.	2	2 34 8.18	9.550	15 7 26.6	45.31	2 59.55	0.306	2 37 7.74
Wed.	3	2 37 57.65	9.572	15 25 26.4	44.68	3 6.64	0.284	2 41 4.29
Thur.	4	2 41 47.65	+ 9.594	15 43 10.9	+44.03	3 13.20	+ 0.262	2 45 0.85
Frid.	5	2 45 38.18	9.616	16 0 39.6	43.37	3 19.23	0.240	2 48 57.41
Sat.	6	2 49 29.24	9.639	16 17 52.3	42.69	3 24.72	0.218	2 52 53.96
SUN.	7	2 53 20.85	+ 9.662	16 34 48.6	+42.00	3 29.67	+ 0.195	2 56 50.52
Mon.	8	2 57 13.01	9.685	16 51 28.3	41.30	3 34.07	0.172	3 0 47.07
Tues.	9	3 1 5.72	9.708	17 7 51.1	40.59	3 37.92	0.149	3 4 43.63
Wed.	10	3 4 58.98	+ 9.731	17 23 56.7	+39.87	3 41.21	+ 0.126	3 8 40.19
Thur.	11	3 8 52.81	9.755	17 39 44.9	39.14	3 43.94	0.102	3 12 36.74
Frid.	12	3 12 47.21	9.779	17 55 15.3	38.40	3 46.09	0.078	3 16 33.30
Sat.	13	3 16 42.19	+ 9.803	18 10 27.7	+37.64	3 47.67	+ 0.054	3 20 29.86
SUN.	14	3 20 37.74	9.827	18 25 21.9	36.87	3 48.67	0.030	3 24 26.41
Mon.	15	3 24 33.87	9.851	18 39 57.5	36.09	3 49.10	+ 0.006	3 28 22.97
Tues.	16	3 28 30.57	+ 9.875	18 54 14.3	+35.30	3 48.95	− 0.018	3 32 19.53
Wed.	17	3 32 27.85	9.899	19 8 12.0	34.50	3 48.23	0.042	3 36 16.08
Thur.	18	3 36 25.71	9.923	19 21 50.4	33.69	3 46.93	0.066	3 40 12.64
Frid.	19	3 40 24.14	+ 9.946	19 35 9.2	+32.87	3 45.06	− 0.090	3 44 9.20
Sat.	20	3 44 23.14	9.970	19 48 8.2	32.04	3 42.61	0.114	3 48 5.75
SUN.	21	3 48 22.71	9.994	20 0 47.0	31.20	3 39.60	0.138	3 52 2.31
Mon.	22	3 52 22.85	+ 10.017	20 13 5.5	+30.34	3 36.02	− 0.161	3 55 58.87
Tues.	23	3 56 23.55	10.040	20 25 3.3	29.47	3 31.88	0.184	3 59 55.43
Wed.	24	4 0 24.79	10.063	20 36 40.2	28.60	3 27.20	0.206	4 3 51.98
Thur.	25	4 4 26.55	+ 10.085	20 47 56.0	+27.71	3 21.99	− 0.228	4 7 48.54
Frid.	26	4 8 28.83	10.106	20 58 50.4	26.82	3 16.26	0.249	4 11 45.10
Sat.	27	4 12 31.63	10.127	21 9 23.1	25.91	3 10.02	0.270	4 15 41.66
SUN.	28	4 16 34.92	+ 10.147	21 19 33.9	+24.99	3 3.30	− 0.290	4 19 38.21
Mon.	29	4 20 38.67	10.166	21 29 22.5	24.06	2 56.11	0.309	4 23 34.77
Tues.	30	4 24 42.88	10.184	21 38 48.8	23.13	2 48.46	0.328	4 27 31.33
Wed.	31	4 28 47.52	10.202	21 47 52.6	22.18	2 40.37	0.346	4 31 27.89
Thur.	32	4 32 52.58	+ 10.219	N.21 56 33.6	+21.23	2 31.87	− 0.363	4 35 24.45

NOTE.—The semidiameter for mean noon may be assumed the same as that for apparent noon.
The sign + prefixed to the hourly change of declination indicates that north declinations are increasing.

Diff. for 1 Hour, + 9s.8565. (Table III.)

AT GREENWICH MEAN NOON.

Day of the Month.	Day of the Year.	THE SUN'S TRUE LONGITUDE. λ	λ′	Diff. for 1 Hour.	LATITUDE.	Logarithm of the Radius Vector of the Earth.	Diff. for 1 Hour.	Mean Time of Sidereal Noon.
		° ′ ″	′ ″	″	″			h m s
1	121	39 59 50.5	59 46.0	145.60	+ 0.20	0.003 3738	+ 44.7	21 23 18.00
2	122	40 58 4.0	57 59.4	145.52	0.31	0.003 4802	44.1	21 19 22.09
3	123	41 56 15.5	56 10.8	145.44	0.39	0.003 5852	43.5	21 15 26.18
4	124	42 54 25.1	54 20.2	145.36	+ 0.44	0.003 6888	+ 42.9	21 11 30.27
5	125	43 52 32.7	52 27.6	145.27	0.47	0.003 7912	42.4	21 7 34.36
6	126	44 50 38.3	50 33.0	145.19	0.45	0.003 8924	41.9	21 3 38.45
7	127	45 48 41.9	48 36.5	145.11	+ 0.40	0.003 9925	+ 41.5	20 59 42.54
8	128	46 46 43.6	46 38.1	145.03	0.34	0.004 0917	41.1	20 55 46.63
9	129	47 44 43.5	44 37.9	144.96	0.25	0.004 1900	40.8	20 51 50.72
10	130	48 42 41.6	42 35.8	144.89	+ 0.12	0.004 2874	+ 40.4	20 47 54.81
11	131	49 40 38.0	40 32.0	144.82	+ 0.01	0.004 3841	40.1	20 43 58.90
12	132	50 38 32.8	38 26.6	144.75	− 0.11	0.004 4800	39.8	20 40 2.99
13	133	51 36 26.0	36 19.7	144.68	− 0.24	0.004 5751	+ 39.4	20 36 7.08
14	134	52 34 17.7	34 11.2	144.62	0.36	0.004 6693	39.1	20 32 11.17
15	135	53 32 7.9	32 1.3	144.57	0.47	0.004 7627	38.7	20 28 15.26
16	136	54 29 56.8	29 50.0	144.51	− 0.55	0.004 8552	+ 38.3	20 24 19.35
17	137	55 27 44.4	27 37.5	144.46	0.62	0.004 9466	37.9	20 20 23.44
18	138	56 25 30.8	25 23.7	144.41	0.66	0.005 0370	37.4	20 16 27.53
19	139	57 23 16.0	23 8.7	144.36	− 0.67	0.005 1262	+ 36.9	20 12 31.62
20	140	58 21 0.0	20 52.6	144.31	0.64	0.005 2141	36.3	20 8 35.70
21	141	59 18 43.0	18 35.4	144.27	0.60	0.005 3006	35.7	20 4 39.79
22	142	60 16 25.0	16 17.2	144.23	− 0.52	0.005 3855	+ 35.0	20 0 43.88
23	143	61 14 5.9	13 57.9	144.18	0.43	0.005 4687	34.3	19 56 47.97
24	144	62 11 45.8	11 37.7	144.14	0.31	0.005 5501	33.5	19 52 52.06
25	145	63 9 24.8	9 16.5	144.10	− 0.17	0.005 6295	+ 32.6	19 48 56.15
26	146	64 7 2.7	6 54.2	144.06	− 0.03	0.005 7067	31.7	19 45 0.24
27	147	65 4 39.6	4 30.9	144.01	+ 0.12	0.005 7816	30.7	19 41 4.32
28	148	66 2 15.3	2 6.5	143.97	+ 0.25	0.005 8541	+ 29.7	19 37 8.41
29	149	66 59 49.9	59 40.9	143.92	0.38	0.005 9243	28.8	19 33 12.50
30	150	67 57 23.3	57 14.1	143.87	0.46	0.005 9921	27.8	19 29 16.59
31	151	68 54 55.4	54 46.1	143.81	0.53	0.006 0576	26.8	19 25 20.68
32	152	69 52 26.3	52 16.8	143.76	+ 0.56	0.006 1209	+ 25.9	19 21 24.76

NOTE.—The longitudes in the column λ are referred to the true equinox of their own date, while those in the column λ′ are referred to the mean equinox of the beginning of the Besselian fictitious year.

Diff. for 1 Hour, −9s.8296. (Table II.)

GREENWICH MEAN TIME.

THE MOON'S

Day of the Month.	SEMIDIAMETER.		HORIZONTAL PARALLAX.				UPPER TRANSIT.		AGE.
	Noon.	Midnight.	Noon.	Diff. for 1 Hour.	Midnight.	Diff. for 1 Hour.	Meridian of Greenwich.	Diff. for 1 Hour.	Noon.
	′ ″	′ ″	° ′ ″	″	° ′ ″	″	h m	m	d
1	16 33.3	16 30.4	60 39.8	−0.75	60 29.0	−1.03	2 29.9	2.67	2.6
2	16 26.6	16 22.1	60 15.1	1.27	59 58.5	1.47	3 34.6	2.70	3.6
3	16 17.0	16 11.5	59 39.8	1.63	59 19.5	1.74	4 38.6	2.60	4.6
4	16 5.7	15 59.7	58 58.1	−1.80	58 36.2	−1.83	5 39.0	2.42	5.6
5	15 53.7	15 47.7	58 14.1	1.83	57 52.2	1.81	6 34.4	2.20	6.6
6	15 41.8	15 36.2	57 30.7	1.76	57 10.0	1.69	7 24.9	2.01	7.6
7	15 30.8	15 25.6	56 50.1	−1.62	56 31.2	−1.53	8 11.3	1.86	8.6
8	15 20.8	15 16.2	56 13.4	1.44	55 56.6	1.35	8 54.7	1.77	9.6
9	15 11.9	15 8.0	55 41.0	1.25	55 26.5	1.16	9 36.5	1.72	10.6
10	15 4.3	15 1.0	55 13.1	−1.07	55 0.8	−0.98	10 17.9	1.73	11.6
11	14 57.9	14 55.2	54 49.6	0.89	54 39.4	0.80	10 59.9	1.78	12.6
12	14 52.7	14 50.5	54 30.3	0.71	54 22.3	0.62	11 43.4	1.85	13.6
13	14 48.6	14 47.1	54 15.4	−0.52	54 9.7	−0.42	12 29.0	1.95	14.6
14	14 45.9	14 45.0	54 5.3	0.31	54 2.2	−0.20	13 16.8	2.04	15.6
15	14 44.6	14 44.6	54 0.6	−0.07	54 0.5	+0.06	14 6.7	2.11	16.6
16	14 45.0	14 45.9	54 2.1	+0.20	54 5.4	+0.35	14 57.8	2.14	17.6
17	14 47.3	14 49.3	54 10.6	0.52	54 17.8	0.69	15 49.0	2.12	18.6
18	14 51.8	14 54.9	54 27.1	0.87	54 38.6	1.05	16 39.3	2.06	19.6
19	14 58.6	15 3.0	54 52.2	+1.23	55 8.1	+1.42	17 28.0	2.00	20.6
20	15 7.9	15 13.5	55 26.3	1.60	55 46.6	1.78	18 15.1	1.93	21.6
21	15 19.6	15 26.2	56 9.0	1.94	56 33.2	2.09	19 0.9	1.89	22.6
22	15 33.3	15 40.7	56 59.1	+2.22	57 26.4	+2.31	19 46.2	1.89	23.6
23	15 48.3	15 56.1	57 54.6	2.37	58 23.2	2.38	20 32.3	1.95	24.6
24	16 3.9	16 11.5	58 51.8	2.35	59 19.7	2.26	21 20.4	2.06	25.6
25	16 18.7	16 25.3	59 46.1	+2.11	60 10.4	+1.91	22 11.9	2.24	26.6
26	16 31.2	16 36.1	60 31.9	1.65	60 50.0	1.34	23 8.2	2.45	27.6
27	16 39.9	16 42.5	61 4.0	0.98	61 13.4	+0.59	δ	. .	28.6
28	16 43.8	16 43.7	61 18.1	+0.18	61 17.8	−0.23	0 9.7	2.66	0.2
29	16 42.3	16 39.6	61 12.5	−0.63	61 2.7	1.00	1 15.4	2.79	1.2
30	16 35.7	16 30.9	60 48.5	1.33	60 30.7	1.62	2 22.3	2.76	2.2
31	16 25.2	16 18.8	60 9.7	1.85	59 46.2	2.03	3 26.8	2.59	3.2
32	16 11.9	16 4.7	59 21.0	−2.15	58 54.7	−2.22	4 26.3	2.37	4.2

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 1.			
	h m s	s	° ′ ″	″
0	4 56 41.74	2.7098	N.25 46 13.5	6.805
1	4 59 24.44	2.7136	25 52 56.1	6.613
2	5 2 7.37	2.7173	25 59 27.1	6.420
3	5 4 50.51	2.7207	26 5 46.5	6.226
4	5 7 33.85	2.7240	26 11 54.2	6.030
5	5 10 17.39	2.7272	26 17 50.1	5.834
6	5 13 1.11	2.7302	26 23 34.3	5.638
7	5 15 45.01	2.7330	26 29 6.6	5.439
8	5 18 29.07	2.7356	26 34 27.0	5.241
9	5 21 13.28	2.7381	26 39 35.5	5.042
10	5 23 57.64	2.7404	26 44 32.0	4.842
11	5 26 42.13	2.7425	26 49 16.5	4.641
12	5 29 26.74	2.7444	26 53 48.9	4.439
13	5 32 11.46	2.7462	26 58 9.2	4.237
14	5 34 56.28	2.7478	27 2 17.3	4.034
15	5 37 41.19	2.7491	27 6 13.3	3.832
16	5 40 26.17	2.7503	27 9 57.1	3.628
17	5 43 11.22	2.7513	27 13 28.7	3.424
18	5 45 56.32	2.7520	27 16 48.0	3.220
19	5 48 41.46	2.7527	27 19 55.1	3.016
20	5 51 26.64	2.7531	27 22 49.9	2.812
21	5 54 11.83	2.7533	27 25 32.5	2.608
22	5 56 57.03	2.7533	27 28 2.8	2.402
23	5 59 42.22	2.7531	N.27 30 20.7	2.197
	TUESDAY 2.			
0	6 2 27.40	2.7528	N.27 32 26.4	1.993
1	6 5 12.55	2.7522	27 34 19.8	1.787
2	6 7 57.66	2.7513	27 36 0.8	1.582
3	6 10 42.71	2.7503	27 37 29.6	1.378
4	6 13 27.70	2.7492	27 38 46.1	1.173
5	6 16 12.61	2.7478	27 39 50.4	0.970
6	6 18 57.44	2.7463	27 40 42.5	0.766
7	6 21 42.17	2.7446	27 41 22.3	0.562
8	6 24 26.79	2.7426	27 41 49.9	0.358
9	6 27 11.28	2.7404	27 42 5.3	+0.156
10	6 29 55.64	2.7381	27 42 8.6	−0.046
11	6 32 39.85	2.7356	27 41 59.8	0.248
12	6 35 23.91	2.7329	27 41 38.9	0.449
13	6 38 7.80	2.7300	27 41 5.9	0.650
14	6 40 51.51	2.7269	27 40 20.9	0.849
15	6 43 35.03	2.7237	27 39 24.0	1.048
16	6 46 18.35	2.7202	27 38 15.2	1.246
17	6 49 1.46	2.7166	27 36 54.5	1.444
18	6 51 44.34	2.7128	27 35 21.9	1.641
19	6 54 26.99	2.7088	27 33 37.6	1.836
20	6 57 9.40	2.7047	27 31 41.6	2.031
21	6 59 51.56	2.7004	27 29 33.9	2.225
22	7 2 33.45	2.6959	27 27 14.6	2.418
23	7 5 15.07	2.6913	27 24 43.8	2.609
24	7 7 56.41	2.6866	N.27 22 1.5	2.800

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 3.			
	h m s	s	° ′ ″	″
0	7 7 56.41	2.6866	N.27 22 1.5	2.800
1	7 10 37.46	2.6816	27 19 7.8	2.990
2	7 13 18.20	2.6764	27 16 2.7	3.178
3	7 15 58.63	2.6712	27 12 46.4	3.365
4	7 18 38.74	2.6658	27 9 18.9	3.551
5	7 21 18.52	2.6603	27 5 40.3	3.736
6	7 23 57.97	2.6546	27 1 50.6	3.920
7	7 26 37.07	2.6488	26 57 49.9	4.102
8	7 29 15.82	2.6428	26 53 38.4	4.282
9	7 31 54.21	2.6368	26 49 16.1	4.462
10	7 34 32.23	2.6306	26 44 43.0	4.640
11	7 37 9.88	2.6243	26 39 59.3	4.817
12	7 39 47.14	2.6178	26 35 5.0	4.992
13	7 42 24.01	2.6113	26 30 0.3	5.165
14	7 45 0.49	2.6046	26 24 45.2	5.337
15	7 47 36.56	2.5978	26 19 19.8	5.508
16	7 50 12.23	2.5910	26 13 44.3	5.677
17	7 52 47.48	2.5840	26 7 58.6	5.845
18	7 55 22.31	2.5770	26 2 2.9	6.010
19	7 57 56.72	2.5699	25 55 57.4	6.174
20	8 0 30.70	2.5627	25 49 42.0	6.337
21	8 3 4.24	2.5553	25 43 16.9	6.498
22	8 5 37.34	2.5479	25 36 42.2	6.658
23	8 8 9.99	2.5405	N.25 29 57.9	6.817
	THURSDAY 4.			
0	8 10 42.20	2.5330	N.25 23 4.2	6.973
1	8 13 13.95	2.5254	25 16 1.2	7.127
2	8 15 45.25	2.5178	25 8 49.0	7.279
3	8 18 16.08	2.5100	25 1 27.7	7.430
4	8 20 46.45	2.5023	24 53 57.4	7.579
5	8 23 16.36	2.4945	24 46 18.2	7.727
6	8 25 45.79	2.4866	24 38 30.2	7.873
7	8 28 14.75	2.4788	24 30 33.4	8.018
8	8 30 43.24	2.4708	24 22 28.1	8.159
9	8 33 11.25	2.4629	24 14 14.3	8.300
10	8 35 38.79	2.4549	24 5 52.1	8.439
11	8 38 5.84	2.4468	23 57 21.6	8.577
12	8 40 32.41	2.4388	23 48 42.9	8.712
13	8 42 58.50	2.4308	23 39 56.2	8.845
14	8 45 24.10	2.4227	23 31 1.5	8.977
15	8 47 49.22	2.4146	23 21 59.0	9.107
16	8 50 13.85	2.4065	23 12 48.7	9.236
17	8 52 38.00	2.3984	23 3 30.7	9.363
18	8 55 1.66	2.3903	22 54 5.2	9.487
19	8 57 24.84	2.3822	22 44 32.3	9.610
20	8 59 47.53	2.3741	22 34 52.0	9.732
21	9 2 9.73	2.3660	22 25 4.5	9.852
22	9 4 31.45	2.3579	22 15 9.8	9.970
23	9 6 52.68	2.3498	22 5 8.1	10.085
24	9 9 13.42	2.3417	N.21 54 59.6	10.198

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 5.			
	h m s	s	° ′ ″	″
0	9 9 13.42	2.3417	N.21 54 59.6	10.198
1	9 11 33.68	2.3337	21 44 44.3	10.312
2	9 13 53.46	2.3257	21 34 22.2	10.423
3	9 16 12.76	2.3177	21 23 53.5	10.533
4	9 18 31.58	2.3097	21 13 18.3	10.640
5	9 20 49.92	2.3018	21 2 36.7	10.746
6	9 23 7.79	2.2938	20 51 48.8	10.849
7	9 25 25.18	2.2859	20 40 54.8	10.952
8	9 27 42.10	2.2781	20 29 54.6	11.053
9	9 29 58.55	2.2703	20 18 48.4	11.152
10	9 32 14.53	2.2624	20 7 36.3	11.250
11	9 34 30.04	2.2547	19 56 18.4	11.346
12	9 36 45.09	2.2470	19 44 54.8	11.440
13	9 38 59.68	2.2393	19 33 25.6	11.532
14	9 41 13.81	2.2318	19 21 50.9	11.623
15	9 43 27.49	2.2243	19 10 10.8	11.713
16	9 45 40.72	2.2167	18 58 25.4	11.800
17	9 47 53.49	2.2092	18 46 34.8	11.886
18	9 50 5.82	2.2018	18 34 39.1	11.971
19	9 52 17.71	2.1945	18 22 38.3	12.054
20	9 54 29.16	2.1873	18 10 32.6	12.135
21	9 56 40.18	2.1800	17 58 22.1	12.215
22	9 58 50.76	2.1728	17 46 6.8	12.293
23	10 1 0.91	2.1657	N.17 33 46.9	12.370
	SATURDAY 6.			
0	10 3 10.64	2.1586	N.17 21 22.4	12.445
1	10 5 19.94	2.1516	17 8 53.5	12.519
2	10 7 28.83	2.1448	16 56 20.1	12.592
3	10 9 37.31	2.1378	16 43 42.5	12.662
4	10 11 45.37	2.1310	16 31 0.7	12.731
5	10 13 53.03	2.1243	16 18 14.8	12.799
6	10 16 0.29	2.1177	16 5 24.8	12.866
7	10 18 7.15	2.1110	15 52 30.9	12.931
8	10 20 13.61	2.1045	15 39 33.1	12.994
9	10 22 19.69	2.0982	15 26 31.6	13.056
10	10 24 25.39	2.0918	15 13 26.4	13.118
11	10 26 30.70	2.0854	15 0 17.5	13.178
12	10 28 35.64	2.0792	14 47 5.1	13.235
13	10 30 40.21	2.0731	14 33 49.3	13.291
14	10 32 44.41	2.0670	14 20 30.1	13.347
15	10 34 48.25	2.0610	14 7 7.7	13.401
16	10 36 51.73	2.0551	13 53 42.1	13.453
17	10 38 54.86	2.0493	13 40 13.4	13.504
18	10 40 57.64	2.0435	13 26 41.6	13.555
19	10 43 0.08	2.0378	13 13 6.8	13.603
20	10 45 2.18	2.0323	12 59 29.2	13.650
21	10 47 3.95	2.0267	12 45 48.8	13.697
22	10 49 5.38	2.0212	12 32 5.6	13.743
23	10 51 6.49	2.0159	12 18 19.7	13.786
24	10 53 7.29	2.0107	N.12 4 31.3	13.828

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 7.			
	h m s	s	° ′ ″	″
0	10 53 7.29	2.0107	N.12 4 31.3	13.828
1	10 55 7.77	2.0054	11 50 40.4	13.869
2	10 57 7.94	2.0003	11 36 47.0	13.909
3	10 59 7.80	1.9952	11 22 51.3	13.948
4	11 1 7.36	1.9903	11 8 53.3	13.985
5	11 3 6.63	1.9854	10 54 53.1	14.022
6	11 5 5.61	1.9806	10 40 50.7	14.057
7	11 7 4.30	1.9758	10 26 46.3	14.091
8	11 9 2.71	1.9712	10 12 39.8	14.124
9	11 11 0.84	1.9666	9 58 31.4	14.156
10	11 12 58.70	1.9622	9 44 21.1	14.187
11	11 14 56.30	1.9578	9 30 9.0	14.216
12	11 16 53.64	1.9535	9 15 55.2	14.243
13	11 18 50.72	1.9493	9 1 39.8	14.271
14	11 20 47.55	1.9451	8 47 22.7	14.298
15	11 22 44.13	1.9410	8 33 4.1	14.323
16	11 24 40.47	1.9371	8 18 44.0	14.347
17	11 26 36.58	1.9332	8 4 22.5	14.369
18	11 28 32.45	1.9293	7 49 59.7	14.391
19	11 30 28.10	1.9256	7 35 35.6	14.413
20	11 32 23.52	1.9219	7 21 10.2	14.432
21	11 34 18.73	1.9183	7 6 43.7	14.450
22	11 36 13.72	1.9148	6 52 16.2	14.468
23	11 38 8.51	1.9115	N. 6 37 47.6	14.485
	MONDAY 8.			
0	11 40 3.10	1.9082	N. 6 23 18.0	14.501
1	11 41 57.49	1.9049	6 8 47.5	14.515
2	11 43 51.69	1.9018	5 54 16.2	14.528
3	11 45 45.70	1.8987	5 39 44.1	14.541
4	11 47 39.53	1.8957	5 25 11.3	14.553
5	11 49 33.18	1.8928	5 10 37.8	14.563
6	11 51 26.66	1.8899	4 56 3.7	14.573
7	11 53 19.97	1.8872	4 41 29.1	14.581
8	11 55 13.12	1.8845	4 26 54.0	14.588
9	11 57 6.11	1.8819	4 12 18.5	14.595
10	11 58 58.95	1.8794	3 57 42.6	14.601
11	12 0 51.64	1.8769	3 43 6.4	14.606
12	12 2 44.18	1.8746	3 28 29.9	14.610
13	12 4 36.59	1.8723	3 13 53.2	14.613
14	12 6 28.86	1.8701	2 59 16.4	14.614
15	12 8 21.00	1.8679	2 44 39.5	14.615
16	12 10 13.01	1.8658	2 30 2.6	14.615
17	12 12 4.90	1.8639	2 15 25.7	14.615
18	12 13 56.68	1.8621	2 0 48.8	14.613
19	12 15 48.35	1.8603	1 46 12.1	14.610
20	12 17 39.91	1.8585	1 31 35.6	14.607
21	12 19 31.37	1.8568	1 16 59.3	14.602
22	12 21 22.73	1.8553	1 2 23.4	14.596
23	12 23 14.00	1.8538	0 47 47.8	14.590
24	12 25 5.18	1.8523	N. 0 33 12.6	14.583

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 9.			
	h m s	s	° ′ ″	″
0	12 25 5.18	1.8523	N. 0 33 12.6	14.583
1	12 26 56.28	1.8510	0 18 37.8	14.575
2	12 28 47.30	1.8497	N. 0 4 3.6	14.565
3	12 30 38.24	1.8485	S. 0 10 30.0	14.556
4	12 32 29.12	1.8474	0 25 3.1	14.546
5	12 34 19.93	1.8463	0 39 35.5	14.534
6	12 36 10.68	1.8453	0 54 7.2	14.522
7	12 38 1.37	1.8444	1 8 38.1	14.508
8	12 39 52.01	1.8437	1 23 8.1	14.493
9	12 41 42.61	1.8429	1 37 37.3	14.479
10	12 43 33.16	1.8422	1 52 5.6	14.463
11	12 45 23.67	1.8415	2 6 32.9	14.446
12	12 47 14.14	1.8409	2 20 59.1	14.428
13	12 49 4.58	1.8405	2 35 24.3	14.410
14	12 50 55.00	1.8402	2 49 48.3	14.390
15	12 52 45.40	1.8398	3 4 11.1	14.370
16	12 54 35.78	1.8395	3 18 32.7	14.349
17	12 56 26.14	1.8393	3 32 53.0	14.328
18	12 58 16.50	1.8393	3 47 12.0	14.305
19	13 0 6.85	1.8392	4 1 29.6	14.281
20	13 1 57.20	1.8393	4 15 45.7	14.256
21	13 3 47.56	1.8393	4 30 0.3	14.231
22	13 5 37.92	1.8394	4 44 13.4	14.205
23	13 7 28.29	1.8397	S. 4 58 24.9	14.178
	WEDNESDAY 10.			
0	13 9 18.68	1.8400	S. 5 12 34.8	14.151
1	13 11 9.09	1.8403	5 26 43.0	14.123
2	13 12 59.52	1.8408	5 40 49.5	14.093
3	13 14 49.98	1.8413	5 54 54.1	14.062
4	13 16 40.47	1.8418	6 8 56.9	14.031
5	13 18 31.00	1.8425	6 22 57.8	13.999
6	13 20 21.57	1.8432	6 36 56.8	13.967
7	13 22 12.18	1.8438	6 50 53.8	13.933
8	13 24 2.83	1.8447	7 4 48.7	13.898
9	13 25 53.54	1.8456	7 18 41.6	13.863
10	13 27 44.30	1.8465	7 32 32.3	13.827
11	13 29 35.12	1.8475	7 46 20.8	13.789
12	13 31 26.00	1.8486	8 0 7.0	13.752
13	13 33 16.95	1.8497	8 13 51.0	13.713
14	13 35 7.97	1.8509	8 27 32.6	13.673
15	13 36 59.06	1.8522	8 41 11.8	13.633
16	13 38 50.24	1.8536	8 54 48.6	13.593
17	13 40 41.49	1.8548	9 8 22.9	13.551
18	13 42 32.82	1.8562	9 21 54.7	13.508
19	13 44 24.24	1.8578	9 35 23.9	13.464
20	13 46 15.76	1.8594	9 48 50.4	13.419
21	13 48 7.37	1.8609	10 2 14.2	13.374
22	13 49 59.07	1.8626	10 15 35.3	13.328
23	13 51 50.88	1.8643	10 28 53.6	13.282
24	13 53 42.79	1.8661	S. 10 42 9.1	13.234

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 11.			
	h m s	s	° ′ ″	″
0	13 53 42.79	1.8661	S. 10 42 9.1	13.234
1	13 55 34.81	1.8679	10 55 21.7	13.185
2	13 57 26.94	1.8698	11 8 31.3	13.136
3	13 59 19.19	1.8718	11 21 38.0	13.086
4	14 1 11.56	1.8738	11 34 41.6	13.034
5	14 3 4.04	1.8758	11 47 42.1	12.983
6	14 4 56.65	1.8779	12 0 39.5	12.930
7	14 6 49.39	1.8801	12 13 33.7	12.877
8	14 8 42.26	1.8823	12 26 24.7	12.823
9	14 10 35.26	1.8845	12 39 12.4	12.768
10	14 12 28.40	1.8868	12 51 56.8	12.712
11	14 14 21.68	1.8892	13 4 37.8	12.654
12	14 16 15.10	1.8915	13 17 15.3	12.596
13	14 18 8.66	1.8940	13 29 49.3	12.538
14	14 20 2.38	1.8965	13 42 19.9	12.479
15	14 21 56.24	1.8990	13 54 46.8	12.418
16	14 23 50.26	1.9016	14 7 10.1	12.358
17	14 25 44.43	1.9042	14 19 29.7	12.296
18	14 27 38.77	1.9069	14 31 45.6	12.233
19	14 29 33.26	1.9096	14 43 57.7	12.169
20	14 31 27.92	1.9124	14 56 5.9	12.104
21	14 33 22.75	1.9153	15 8 10.2	12.039
22	14 35 17.75	1.9181	15 20 10.6	11.973
23	14 37 12.92	1.9210	S. 15 32 7.0	11.907
	FRIDAY 12.			
0	14 39 8.27	1.9239	S. 15 43 59.4	11.839
1	14 41 3.79	1.9268	15 55 47.7	11.770
2	14 42 59.49	1.9298	16 7 31.8	11.700
3	14 44 55.37	1.9329	16 19 11.7	11.630
4	14 46 51.44	1.9360	16 30 47.4	11.559
5	14 48 47.69	1.9390	16 42 18.8	11.488
6	14 50 44.12	1.9422	16 53 45.9	11.415
7	14 52 40.75	1.9454	17 5 8.6	11.341
8	14 54 37.57	1.9486	17 16 26.8	11.266
9	14 56 34.58	1.9518	17 27 40.5	11.191
10	14 58 31.79	1.9551	17 38 49.7	11.115
11	15 0 29.19	1.9583	17 49 54.3	11.038
12	15 2 26.79	1.9617	18 0 54.3	10.961
13	15 4 24.59	1.9651	18 11 49.6	10.882
14	15 6 22.60	1.9685	18 22 40.1	10.802
15	15 8 20.81	1.9718	18 33 25.8	10.722
16	15 10 19.22	1.9753	18 44 6.7	10.641
17	15 12 17.84	1.9788	18 54 42.7	10.558
18	15 14 16.67	1.9823	19 5 13.7	10.476
19	15 16 15.71	1.9858	19 15 39.8	10.393
20	15 18 14.96	1.9893	19 26 0.8	10.308
21	15 20 14.42	1.9928	19 36 16.7	10.222
22	15 22 14.09	1.9963	19 46 27.4	10.136
23	15 24 13.98	1.9999	19 56 33.0	10.049
24	15 26 14.08	2.0035	S. 20 6 33.3	9.961

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 13.			
	h m s	s	° ′ ″	″
0	15 26 14.08	2.0035	S. 20 6 33.3	9.961
1	15 28 14.40	2.0071	20 16 28.3	9.873
2	15 30 14.93	2.0107	20 26 18.0	9.783
3	15 32 15.68	2.0143	20 36 2.3	9.693
4	15 34 16.64	2.0179	20 45 41.2	9.603
5	15 36 17.83	2.0217	20 55 14.6	9.510
6	15 38 19.24	2.0253	21 4 42.4	9.418
7	15 40 20.86	2.0289	21 14 4.7	9.324
8	15 42 22.71	2.0326	21 23 21.3	9.229
9	15 44 24.77	2.0362	21 32 32.2	9.134
10	15 46 27.05	2.0398	21 41 37.4	9.039
11	15 48 29.55	2.0436	21 50 36.9	8.942
12	15 50 32.28	2.0473	21 59 30.5	8.844
13	15 52 35.23	2.0509	22 8 18.2	8.747
14	15 54 38.39	2.0546	22 17 0.1	8.648
15	15 56 41.78	2.0583	22 25 36.0	8.548
16	15 58 45.39	2.0619	22 34 5.8	8.447
17	16 0 49.21	2.0656	22 42 29.6	8.346
18	16 2 53.26	2.0693	22 50 47.3	8.244
19	16 4 57.52	2.0729	22 58 58.9	8.141
20	16 7 2.01	2.0766	23 7 4.2	8.037
21	16 9 6.71	2.0802	23 15 3.3	7.933
22	16 11 11.63	2.0838	23 22 56.2	7.828
23	16 13 16.76	2.0873	S. 23 30 42.7	7.722
	SUNDAY 14.			
0	16 15 22.11	2.0909	S. 23 38 22.8	7.615
1	16 17 27.67	2.0945	23 45 56.5	7.508
2	16 19 33.45	2.0981	23 53 23.8	7.400
3	16 21 39.44	2.1016	24 0 44.5	7.291
4	16 23 45.64	2.1051	24 7 58.7	7.182
5	16 25 52.05	2.1085	24 15 6.3	7.071
6	16 27 58.66	2.1119	24 22 7.2	6.960
7	16 30 5.48	2.1154	24 29 1.5	6.849
8	16 32 12.51	2.1188	24 35 49.1	6.737
9	16 34 19.74	2.1223	24 42 29.9	6.623
10	16 36 27.18	2.1256	24 49 3.9	6.510
11	16 38 34.81	2.1288	24 55 31.1	6.396
12	16 40 42.64	2.1322	25 1 51.4	6.281
13	16 42 50.67	2.1354	25 8 4.8	6.165
14	16 44 58.89	2.1386	25 14 11.2	6.049
15	16 47 7.30	2.1418	25 20 10.7	5.933
16	16 49 15.90	2.1449	25 26 3.1	5.814
17	16 51 24.69	2.1480	25 31 48.4	5.696
18	16 53 33.66	2.1511	25 37 26.6	5.578
19	16 55 42.82	2.1541	25 42 57.7	5.458
20	16 57 52.15	2.1570	25 48 21.6	5.338
21	17 0 1.66	2.1600	25 53 38.3	5.218
22	17 2 11.35	2.1629	25 58 47.8	5.098
23	17 4 21.21	2.1658	26 3 50.0	4.976
24	17 6 31.24	2.1686	S. 26 8 44.9	4.853

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 15.			
	h m s	s	° ′ ″	″
0	17 6 31.24	2.1686	S. 26 8 44.9	4.853
1	17 8 41.44	2.1713	26 13 32.4	4.731
2	17 10 51.80	2.1740	26 18 12.6	4.608
3	17 13 2.32	2.1766	26 22 45.4	4.484
4	17 15 12.99	2.1792	26 27 10.7	4.359
5	17 17 23.82	2.1818	26 31 28.5	4.235
6	17 19 34.80	2.1842	26 35 38.9	4.110
7	17 21 45.92	2.1866	26 39 41.7	3.984
8	17 23 57.19	2.1890	26 43 37.0	3.858
9	17 26 8.60	2.1913	26 47 24.7	3.732
10	17 28 20.15	2.1936	26 51 4.8	3.605
11	17 30 31.83	2.1958	26 54 37.3	3.478
12	17 32 43.64	2.1979	26 58 2.1	3.350
13	17 34 55.58	2.2000	27 1 19.3	3.222
14	17 37 7.64	2.2019	27 4 28.7	3.094
15	17 39 19.81	2.2038	27 7 30.4	2.964
16	17 41 32.10	2.2057	27 10 24.4	2.835
17	17 43 44.50	2.2076	27 13 10.6	2.705
18	17 45 57.01	2.2093	27 15 49.0	2.575
19	17 48 9.62	2.2110	27 18 19.6	2.445
20	17 50 22.33	2.2126	27 20 42.4	2.314
21	17 52 35.13	2.2141	27 22 57.3	2.183
22	17 54 48.02	2.2156	27 25 4.3	2.052
23	17 57 1.00	2.2170	S. 27 27 3.5	1.920
	TUESDAY 16.			
0	17 59 14.06	2.2183	S. 27 28 54.7	1.788
1	18 1 27.20	2.2196	27 30 38.0	1.656
2	18 3 40.41	2.2208	27 32 13.4	1.524
3	18 5 53.69	2.2219	27 33 40.9	1.392
4	18 8 7.04	2.2230	27 35 0.4	1.259
5	18 10 20.45	2.2239	27 36 12.0	1.127
6	18 12 33.91	2.2248	27 37 15.6	0.993
7	18 14 47.43	2.2257	27 38 11.2	0.860
8	18 17 0.99	2.2264	27 38 58.8	0.727
9	18 19 14.60	2.2271	27 39 38.4	0.593
10	18 21 28.24	2.2277	27 40 10.0	0.459
11	18 23 41.92	2.2283	27 40 33.5	0.326
12	18 25 55.63	2.2287	27 40 49.1	0.193
13	18 28 9.36	2.2291	27 40 56.6	−0.058
14	18 30 23.12	2.2294	27 40 56.1	+0.075
15	18 32 36.89	2.2296	27 40 47.6	0.209
16	18 34 50.67	2.2298	27 40 31.0	0.343
17	18 37 4.46	2.2299	27 40 6.4	0.477
18	18 39 18.26	2.2300	27 39 33.8	0.611
19	18 41 32.06	2.2299	27 38 53.1	0.746
20	18 43 45.85	2.2298	27 38 4.3	0.880
21	18 45 59.63	2.2296	27 37 7.5	1.013
22	18 48 13.40	2.2293	27 36 2.7	1.148
23	18 50 27.15	2.2290	27 34 49.8	1.281
24	18 52 40.88	2.2286	S. 27 33 29.0	1.414

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 17.			
	h m s	s	° ′ ″	″
0	18 52 40.88	2.2286	S.27 33 29.0	1.414
1	18 54 54.58	2.2281	27 32 0.1	1.548
2	18 57 8.25	2.2276	27 30 23.2	1.682
3	18 59 21.89	2.2270	27 28 38.3	1.816
4	19 1 35.49	2.2263	27 26 45.3	1.949
5	19 3 49.04	2.2255	27 24 44.4	2.082
6	19 6 2.55	2.2247	27 22 35.5	2.215
7	19 8 16.01	2.2238	27 20 18.6	2.348
8	19 10 29.41	2.2228	27 17 53.7	2.481
9	19 12 42.75	2.2218	27 15 20.9	2.613
10	19 14 56.03	2.2208	27 12 40.1	2.746
11	19 17 9.24	2.2196	27 9 51.4	2.878
12	19 19 22.38	2.2184	27 6 54.8	3.009
13	19 21 35.45	2.2172	27 3 50.3	3.142
14	19 23 48.44	2.2158	27 0 37.8	3.273
15	19 26 1.34	2.2143	26 57 17.5	3.404
16	19 28 14.16	2.2129	26 53 49.3	3.535
17	19 30 26.89	2.2114	26 50 13.3	3.665
18	19 32 39.53	2.2098	26 46 29.5	3.796
19	19 34 52.07	2.2083	26 42 37.8	3.926
20	19 37 4.52	2.2066	26 38 38.4	4.055
21	19 39 16.86	2.2048	26 34 31.2	4.185
22	19 41 29.10	2.2031	26 30 16.2	4.314
23	19 43 41.23	2.2012	S.26 25 53.5	4.443
	THURSDAY 18.			
0	19 45 53.24	2.1993	S.26 21 23.1	4.571
1	19 48 5.14	2.1974	26 16 45.0	4.698
2	19 50 16.93	2.1954	26 11 59.3	4.826
3	19 52 28.59	2.1933	26 7 5.9	4.953
4	19 54 40.13	2.1913	26 2 5.0	5.079
5	19 56 51.55	2.1893	25 56 56.4	5.206
6	19 59 2.84	2.1871	25 51 40.3	5.332
7	20 1 14.00	2.1849	25 46 16.6	5.457
8	20 3 25.03	2.1827	25 40 45.5	5.582
9	20 5 35.92	2.1803	25 35 6.8	5.707
10	20 7 46.67	2.1781	25 29 20.7	5.830
11	20 9 57.29	2.1757	25 23 27.2	5.954
12	20 12 7.76	2.1733	25 17 26.2	6.078
13	20 14 18.09	2.1709	25 11 17.9	6.200
14	20 16 28.27	2.1684	25 5 2.2	6.323
15	20 18 38.30	2.1660	24 58 39.2	6.444
16	20 20 48.19	2.1635	24 52 8.9	6.565
17	20 22 57.92	2.1609	24 45 31.4	6.686
18	20 25 7.50	2.1584	24 38 46.6	6.806
19	20 27 16.93	2.1559	24 31 54.7	6.926
20	20 29 26.21	2.1533	24 24 55.5	7.046
21	20 31 35.33	2.1507	24 17 49.2	7.164
22	20 33 44.29	2.1480	24 10 35.8	7.282
23	20 35 53.09	2.1453	24 3 15.3	7.399
24	20 38 1.73	2.1427	S.23 55 47.9	7.515

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 19.			
	h m s	s	° ′ ″	″
0	20 38 1.73	2.1427	S.23 55 47.9	7.515
1	20 40 10.21	2.1400	23 48 13.5	7.632
2	20 42 18.53	2.1373	23 40 32.1	7.748
3	20 44 26.69	2.1346	23 32 43.7	7.864
4	20 46 34.68	2.1318	23 24 48.4	7.978
5	20 48 42.51	2.1292	23 16 46.3	8.092
6	20 50 50.18	2.1264	23 8 37.4	8.205
7	20 52 57.68	2.1237	23 0 21.7	8.318
8	20 55 5.02	2.1210	22 51 59.2	8.431
9	20 57 12.20	2.1183	22 43 30.0	8.543
10	20 59 19.21	2.1154	22 34 54.1	8.653
11	21 1 26.05	2.1127	22 26 11.6	8.764
12	21 3 32.73	2.1099	22 17 22.4	8.874
13	21 5 39.24	2.1072	22 8 26.7	8.983
14	21 7 45.59	2.1044	21 59 24.4	9.092
15	21 9 51.77	2.1017	21 50 15.7	9.199
16	21 11 57.79	2.0990	21 41 0.5	9.307
17	21 14 3.65	2.0963	21 31 38.9	9.413
18	21 16 9.34	2.0935	21 22 10.9	9.519
19	21 18 14.87	2.0908	21 12 36.6	9.625
20	21 20 20.24	2.0882	21 2 55.9	9.731
21	21 22 25.45	2.0855	20 53 8.9	9.834
22	21 24 30.50	2.0828	20 43 15.8	9.937
23	21 26 35.39	2.0802	S.20 33 16.5	10.040
	SATURDAY 20.			
0	21 28 40.12	2.0775	S.20 23 11.0	10.142
1	21 30 44.69	2.0749	20 12 59.4	10.243
2	21 32 49.11	2.0723	20 2 41.8	10.343
3	21 34 53.37	2.0698	19 52 18.2	10.443
4	21 36 57.48	2.0673	19 41 48.6	10.543
5	21 39 1.44	2.0648	19 31 13.0	10.643
6	21 41 5.25	2.0623	19 20 31.5	10.740
7	21 43 8.91	2.0598	19 9 44.2	10.837
8	21 45 12.42	2.0573	18 58 51.0	10.934
9	21 47 15.79	2.0550	18 47 52.1	11.030
10	21 49 19.02	2.0527	18 36 47.4	11.126
11	21 51 22.11	2.0503	18 25 37.0	11.220
12	21 53 25.05	2.0479	18 14 21.0	11.313
13	21 55 27.86	2.0457	18 2 59.4	11.407
14	21 57 30.53	2.0434	17 51 32.2	11.499
15	21 59 33.07	2.0413	17 39 59.5	11.591
16	22 1 35.48	2.0391	17 28 21.3	11.682
17	22 3 37.76	2.0369	17 16 37.7	11.772
18	22 5 39.91	2.0348	17 4 48.7	11.862
19	22 7 41.94	2.0328	16 52 54.3	11.951
20	22 9 43.85	2.0308	16 40 54.6	12.038
21	22 11 45.64	2.0288	16 28 49.7	12.126
22	22 13 47.31	2.0269	16 16 39.5	12.213
23	22 15 48.87	2.0251	16 4 24.2	12.298
24	22 17 50.32	2.0233	S.15 52 3.7	12.384

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 21.			
	h m s	s	° ′ ″	″
0	22 17 50.32	2.0233	S. 15 52 3.7	12.384
1	22 19 51.66	2.0215	15 39 38.1	12.468
2	22 21 52.90	2.0198	15 27 7.5	12.552
3	22 23 54.03	2.0180	15 14 31.9	12.635
4	22 25 55.06	2.0164	15 1 51.3	12.718
5	22 27 56.00	2.0149	14 49 5.8	12.799
6	22 29 56.85	2.0134	14 36 15.4	12.879
7	22 31 57.61	2.0119	14 23 20.3	12.958
8	22 33 58.28	2.0104	14 10 20.4	13.038
9	22 35 58.86	2.0091	13 57 15.7	13.118
10	22 37 59.37	2.0078	13 44 6.3	13.195
11	22 39 59.80	2.0065	13 30 52.3	13.271
12	22 42 0.15	2.0053	13 17 33.8	13.347
13	22 44 0.44	2.0042	13 4 10.7	13.423
14	22 46 0.66	2.0031	12 50 43.1	13.497
15	22 48 0.81	2.0021	12 37 11.1	13.571
16	22 50 0.91	2.0012	12 23 34.6	13.644
17	22 52 0.95	2.0003	12 9 53.8	13.716
18	22 54 0.94	1.9994	11 56 8.7	13.787
19	22 56 0.88	1.9987	11 42 19.4	13.857
20	22 58 0.78	1.9980	11 28 25.9	13.927
21	23 0 0.64	1.9973	11 14 28.2	13.996
22	23 2 0.46	1.9968	11 0 26.4	14.063
23	23 4 0.25	1.9963	S. 10 46 20.6	14.130
	MONDAY 22.			
0	23 6 0.01	1.9958	S. 10 32 10.8	14.196
1	23 7 59.75	1.9954	10 17 57.1	14.262
2	23 9 59.46	1.9951	10 3 39.4	14.327
3	23 11 59.16	1.9949	9 49 17.9	14.390
4	23 13 58.85	1.9948	9 34 52.6	14.453
5	23 15 58.53	1.9947	9 20 23.6	14.514
6	23 17 58.21	1.9947	9 5 50.9	14.575
7	23 19 57.89	1.9947	8 51 14.6	14.635
8	23 21 57.58	1.9948	8 36 34.7	14.694
9	23 23 57.27	1.9950	8 21 51.3	14.753
10	23 25 56.98	1.9953	8 7 4.4	14.810
11	23 27 56.71	1.9957	7 52 14.1	14.867
12	23 29 56.46	1.9961	7 37 20.4	14.922
13	23 31 56.24	1.9966	7 22 23.5	14.976
14	23 33 56.05	1.9972	7 7 23.3	15.030
15	23 35 55.90	1.9978	6 52 19.9	15.082
16	23 37 55.78	1.9985	6 37 13.4	15.133
17	23 39 55.72	1.9994	6 22 3.9	15.184
18	23 41 55.71	2.0003	6 6 51.3	15.234
19	23 43 55.75	2.0012	5 51 35.7	15.283
20	23 45 55.85	2.0023	5 36 17.3	15.331
21	23 47 56.02	2.0034	5 20 56.1	15.377
22	23 49 56.26	2.0046	5 5 32.1	15.423
23	23 51 56.57	2.0058	4 50 5.4	15.468
24	23 53 56.96	2.0073	S. 4 34 36.0	15.511
	TUESDAY 23.			
	h m s	s	° ′ ″	″
0	23 53 56.96	2.0073	S. 4 34 36.0	15.511
1	23 55 57.44	2.0088	4 19 4.1	15.553
2	23 57 58.01	2.0103	4 3 29.6	15.595
3	23 59 58.67	2.0118	3 47 52.7	15.635
4	0 1 59.43	2.0135	3 32 13.4	15.675
5	0 4 0.29	2.0153	3 16 31.7	15.713
6	0 6 1.27	2.0173	3 0 47.8	15.750
7	0 8 2.36	2.0193	2 45 1.7	15.786
8	0 10 3.58	2.0213	2 29 13.5	15.821
9	0 12 4.92	2.0234	2 13 23.2	15.854
10	0 14 6.39	2.0256	1 57 31.0	15.887
11	0 16 7.99	2.0279	1 41 36.8	15.918
12	0 18 9.74	2.0303	1 25 40.8	15.948
13	0 20 11.63	2.0328	1 9 43.0	15.977
14	0 22 13.68	2.0354	0 53 43.6	16.004
15	0 24 15.88	2.0381	0 37 42.5	16.031
16	0 26 18.25	2.0408	0 21 39.9	16.056
17	0 28 20.78	2.0436	S. 0 5 35.8	16.080
18	0 30 23.48	2.0465	N. 0 10 29.7	16.103
19	0 32 26.36	2.0496	0 26 36.5	16.124
20	0 34 29.43	2.0528	0 42 44.6	16.145
21	0 36 32.69	2.0559	0 58 53.9	16.163
22	0 38 36.14	2.0592	1 15 4.2	16.180
23	0 40 39.79	2.0626	N. 1 31 15.5	16.196
	WEDNESDAY 24.			
0	0 42 43.65	2.0661	N. 1 47 27.7	16.211
1	0 44 47.72	2.0696	2 3 40.8	16.224
2	0 46 52.00	2.0733	2 19 54.6	16.236
3	0 48 56.51	2.0771	2 36 9.1	16.247
4	0 51 1.25	2.0809	2 52 24.2	16.256
5	0 53 6.22	2.0848	3 8 39.8	16.263
6	0 55 11.43	2.0888	3 24 55.8	16.269
7	0 57 16.88	2.0929	3 41 12.1	16.274
8	0 59 22.58	2.0972	3 57 28.7	16.277
9	1 1 28.54	2.1015	4 13 45.4	16.278
10	1 3 34.76	2.1058	4 30 2.1	16.278
11	1 5 41.24	2.1103	4 46 18.8	16.278
12	1 7 48.00	2.1149	5 2 35.4	16.275
13	1 9 55.03	2.1196	5 18 51.8	16.270
14	1 12 2.35	2.1244	5 35 7.8	16.263
15	1 14 9.96	2.1293	5 51 23.4	16.256
16	1 16 17.86	2.1342	6 7 38.5	16.247
17	1 18 26.06	2.1392	6 23 53.0	16.235
18	1 20 34.56	2.1443	6 40 6.7	16.222
19	1 22 43.37	2.1495	6 56 19.6	16.208
20	1 24 52.50	2.1548	7 12 31.6	16.192
21	1 27 1.95	2.1603	7 28 42.6	16.174
22	1 29 11.73	2.1658	7 44 52.5	16.155
23	1 31 21.84	2.1713	8 1 1.2	16.133
24	1 33 32.28	2.1769	N. 8 17 8.5	16.109

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 25.			
	h m s	s	° ′ ″	″
0	1 33 32.28	2.1769	N. 8 17 8.5	16.109
1	1 35 43.07	2.1827	8 33 14.3	16.084
2	1 37 54.20	2.1885	8 49 18.6	16.058
3	1 40 5.69	2.1944	9 5 21.2	16.029
4	1 42 17.53	2.2004	9 21 22.1	15.999
5	1 44 29.74	2.2066	9 37 21.1	15.966
6	1 46 42.32	2.2128	9 53 18.0	15.931
7	1 48 55.27	2.2190	10 9 12.8	15.895
8	1 51 8.60	2.2853	10 25 5.4	15.857
9	1 53 22.31	2.2318	10 40 55.6	15.816
10	1 55 36.41	2.2383	10 56 43.3	15.774
11	1 57 50.90	2.2448	11 12 28.5	15.731
12	2 0 5.79	2.2515	11 28 11.0	15.684
13	2 2 21.08	2.2583	11 43 50.6	15.636
14	2 4 36.78	2.2652	11 59 27.3	15.586
15	2 6 52.90	2.2721	12 15 0.9	15.533
16	2 9 9.43	2.2790	12 30 31.3	15.479
17	2 11 26.38	2.2860	12 45 58.4	15.423
18	2 13 43.75	2.2931	13 1 22.0	15.364
19	2 16 1.55	2.3003	13 16 42.1	15.304
20	2 18 19.79	2.3076	13 31 58.5	15.241
21	2 20 38.46	2.3149	13 47 11.0	15.175
22	2 22 57.58	2.3223	14 2 19.5	15.108
23	2 25 17.14	2.3298	N.14 17 24.0	15.039
	FRIDAY 26.			
0	2 27 37.15	2.3373	N.14 32 24.2	14.968
1	2 29 57.61	2.3448	14 47 20.1	14.894
2	2 32 18.53	2.3524	15 2 11.5	14.818
3	2 34 39.90	2.3601	15 16 58.3	14.741
4	2 37 1.74	2.3679	15 31 40.4	14.660
5	2 39 24.05	2.3757	15 46 17.5	14.577
6	2 41 46.82	2.3834	16 0 49.6	14.492
7	2 44 10.06	2.3913	16 15 16.5	14.405
8	2 46 33.78	2.3993	16 29 38.2	14.316
9	2 48 57.97	2.4072	16 43 54.4	14.223
10	2 51 22.64	2.4153	16 58 5.0	14.129
11	2 53 47.80	2.4233	17 12 9.9	14.033
12	2 56 13.44	2.4313	17 26 8.9	13.934
13	2 58 39.56	2.4394	17 40 2.0	13.833
14	3 1 6.17	2.4475	17 53 48.9	13.729
15	3 3 33.26	2.4556	18 7 29.5	13.623
16	3 6 0.84	2.4638	18 21 3.7	13.515
17	3 8 28.92	2.4720	18 34 31.3	13.404
18	3 10 57.48	2.4802	18 47 52.2	13.292
19	3 13 26.54	2.4884	19 1 6.3	13.177
20	3 15 56.09	2.4966	19 14 13.4	13.058
21	3 18 26.13	2.5048	19 27 13.3	12.938
22	3 20 56.66	2.5130	19 40 6.0	12.817
23	3 23 27.69	2.5213	19 52 51.3	12.692
24	3 25 59.21	2.5294	N.20 5 29.0	12.565

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 27.			
	h m s	s	° ′ ″	″
0	3 25 59.21	2.5294	N.20 5 29.0	12.565
1	3 28 31.22	2.5376	20 17 59.1	12.436
2	3 31 3.72	2.5458	20 30 21.3	12.304
3	3 33 36.71	2.5539	20 42 35.6	12.170
4	3 36 10.19	2.5620	20 54 41.7	12.033
5	3 38 44.15	2.5701	21 6 39.6	11.894
6	3 41 18.60	2.5782	21 18 29.0	11.753
7	3 43 53.53	2.5862	21 30 9.9	11.610
8	3 46 28.94	2.5941	21 41 42.2	11.465
9	3 49 4.82	2.6020	21 53 5.7	11.317
10	3 51 41.18	2.6099	22 4 20.2	11.166
11	3 54 18.01	2.6178	22 15 25.6	11.013
12	3 56 55.31	2.6255	22 26 21.8	10.859
13	3 59 33.07	2.6332	22 37 8.7	10.702
14	4 2 11.29	2.6408	22 47 46.1	10.543
15	4 4 49.97	2.6483	22 58 13.8	10.381
16	4 7 29.09	2.6558	23 8 31.8	10.218
17	4 10 8.66	2.6632	23 18 40.0	10.053
18	4 12 48.67	2.6704	23 28 38.2	9.885
19	4 15 29.11	2.6776	23 38 26.2	9.715
20	4 18 9.98	2.6847	23 48 4.0	9.543
21	4 20 51.27	2.6917	23 57 31.4	9.370
22	4 23 32.98	2.6985	24 6 48.4	9.195
23	4 26 15.09	2.7053	N.24 15 54.8	9.017
	SUNDAY 28.			
0	4 28 57.61	2.7120	N.24 24 50.4	8.837
1	4 31 40.53	2.7185	24 33 35.2	8.655
2	4 34 23.83	2.7248	24 42 9.0	8.472
3	4 37 7.51	2.7311	24 50 31.8	8.287
4	4 39 51.56	2.7372	24 58 43.4	8.100
5	4 42 35.97	2.7432	25 6 43.8	7.912
6	4 45 20.74	2.7490	25 14 32.8	7.721
7	4 48 5.85	2.7546	25 22 10.3	7.528
8	4 50 51.29	2.7601	25 29 36.2	7.335
9	4 53 37.06	2.7655	25 36 50.5	7.140
10	4 56 23.15	2.7707	25 43 53.0	6.943
11	4 59 9.54	2.7757	25 50 43.7	6.746
12	5 1 56.23	2.7805	25 57 22.5	6.546
13	5 4 43.20	2.7852	26 3 49.2	6.344
14	5 7 30.45	2.7897	26 10 3.8	6.142
15	5 10 17.96	2.7939	26 16 6.2	5.938
16	5 13 5.72	2.7979	26 21 56.4	5.734
17	5 15 53.71	2.8018	26 27 34.3	5.528
18	5 18 41.93	2.8055	26 32 59.8	5.321
19	5 21 30.37	2.8090	26 38 12.8	5.113
20	5 24 19.01	2.8123	26 43 13.3	4.903
21	5 27 7.84	2.8153	26 48 1.2	4.693
22	5 29 56.85	2.8182	26 52 36.5	4.483
23	5 32 46.02	2.8208	26 56 59.1	4.271
24	5 35 35.35	2.8233	N.27 1 9.0	4.058

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 29.			
	h m s	s	° ′ ″	″
0	5 35 35.35	2.8233	N.27 1 9.0	4.058
1	5 38 24.82	2.8255	27 5 6.1	3.845
2	5 41 14.41	2.8275	27 8 50.4	3.631
3	5 44 4.12	2.8293	27 12 21.8	3.417
4	5 46 53.92	2.8308	27 15 40.4	3.202
5	5 49 43.81	2.8321	27 18 46.0	2.986
6	5 52 33.77	2.8332	27 21 38.7	2.770
7	5 55 23.79	2.8340	27 24 18.4	2.554
8	5 58 13.85	2.8346	27 26 45.2	2.338
9	6 1 3.94	2.8349	27 28 59.0	2.122
10	6 3 54.04	2.8351	27 30 59.8	1.905
11	6 6 44.15	2.8351	27 32 47.6	1.688
12	6 9 34.25	2.8348	27 34 22.3	1.470
13	6 12 24.32	2.8342	27 35 44.0	1.253
14	6 15 14.35	2.8334	27 36 52.7	1.037
15	6 18 4.33	2.8324	27 37 48.4	0.821
16	6 20 54.24	2.8311	27 38 31.2	0.605
17	6 23 44.06	2.8296	27 39 1.0	0.388
18	6 26 33.79	2.8279	27 39 17.8	+0.173
19	6 29 23.41	2.8259	27 39 21.7	−0.043
20	6 32 12.90	2.8237	27 39 12.7	0.258
21	6 35 2.25	2.8213	27 38 50.8	0.472
22	6 37 51.46	2.8187	27 38 16.1	0.685
23	6 40 40.50	2.8158	N.27 37 28.6	0.898
	TUESDAY 30.			
0	6 43 29.36	2.8128	N.27 36 28.3	1.111
1	6 46 18.03	2.8094	27 35 15.3	1.323
2	6 49 6.49	2.8059	27 33 49.6	1.533
3	6 51 54.74	2.8022	27 32 11.3	1.743
4	6 54 42.76	2.7983	27 30 20.5	1.952
5	6 57 30.53	2.7941	27 28 17.1	2.160
6	7 0 18.05	2.7898	27 26 1.3	2.367
7	7 3 5.30	2.7852	27 23 33.1	2.573
8	7 5 52.27	2.7804	27 20 52.6	2.778
9	7 8 38.95	2.7754	27 17 59.8	2.981
10	7 11 25.32	2.7703	27 14 54.9	3.183
11	7 14 11.38	2.7650	27 11 37.9	3.384
12	7 16 57.12	2.7595	27 8 8.8	3.584
13	7 19 42.52	2.7537	27 4 27.8	3.782
14	7 22 27.57	2.7478	27 0 35.0	3.978
15	7 25 12.26	2.7418	26 56 30.4	4.174
16	7 27 56.59	2.7357	26 52 14.1	4.368
17	7 30 40.54	2.7293	26 47 46.2	4.561
18	7 33 24.10	2.7228	26 43 6.8	4.752
19	7 36 7.27	2.7161	26 38 16.0	4.941
20	7 38 50.03	2.7093	26 33 13.9	5.128
21	7 41 32.38	2.7023	26 28 0.6	5.315
22	7 44 14.30	2.6952	26 22 36.2	5.499
23	7 46 55.80	2.6879	26 17 0.7	5.682
24	7 49 36.85	2.6804	N.26 11 14.3	5.863
	WEDNESDAY 31.			
0	7 49 36.85	2.6804	N.26 11 14.3	5.863
1	7 52 17.45	2.6729	26 5 17.2	6.041
2	7 54 57.60	2.6653	25 59 9.4	6.218
3	7 57 37.29	2.6576	25 52 51.0	6.394
4	8 0 16.51	2.6498	25 46 22.1	6.568
5	8 2 55.26	2.6418	25 39 42.9	6.738
6	8 5 33.52	2.6337	25 32 53.5	6.908
7	8 8 11.30	2.6255	25 25 53.9	7.077
8	8 10 48.58	2.6173	25 18 44.3	7.243
9	8 13 25.37	2.6090	25 11 24.8	7.407
10	8 16 1.66	2.6006	25 3 55.5	7.569
11	8 18 37.44	2.5921	24 56 16.5	7.729
12	8 21 12.71	2.5835	24 48 28.0	7.887
13	8 23 47.46	2.5748	24 40 30.1	8.043
14	8 26 21.69	2.5662	24 32 22.9	8.197
15	8 28 55.40	2.5574	24 24 6.5	8.348
16	8 31 28.58	2.5487	24 15 41.1	8.498
17	8 34 1.24	2.5398	24 7 6.7	8.647
18	8 36 33.36	2.5309	23 58 23.5	8.793
19	8 39 4.95	2.5220	23 49 31.6	8.936
20	8 41 36.00	2.5131	23 40 31.2	9.078
21	8 44 6.52	2.5041	23 31 22.3	9.218
22	8 46 36.49	2.4950	23 22 5.1	9.355
23	8 49 5.92	2.4860	N.23 12 39.7	9.491
	THURSDAY, JUNE 1.			
0	8 51 34.81	2.4769	N.23 3 6.2	9.623

PHASES OF THE MOON.

			d	h	m
☽	First Quarter	May	5	1	13.7
○	Full Moon		12	18	9.7
☾	Last Quarter		20	21	22.9
●	New Moon		27	18	24.4

			d	h
☾	Apogee	May	15	6.8
☾	Perigee		28	5.4

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″	′	° ′ ″		° ′ ″		° ′ ″	
1	SUN	W.	35 53 10	2368	37 37 32	2375	39 21 43	2383	41 5 43	2391
	Pollux	E.	36 15 36	2081	34 24 8	2088	32 32 51	2096	30 41 46	2105
	Spica	E.	126 53 33	2089	125 2 17	2095	123 11 10	2102	121 20 14	2109
2	SUN	W.	49 42 29	2440	51 25 6	2451	53 7 28	2463	54 49 33	2475
	Aldebaran	W.	23 58 4	2393	25 41 49	2376	27 25 58	2362	29 10 28	2351
	VENUS	W.	13 16 59	2531	14 57 29	2538	16 37 49	2547	18 17 57	2556
	Spica	E.	112 8 38	2154	110 19 1	2165	108 29 40	2175	106 40 35	2186
	JUPITER	E.	128 42 44	2109	126 51 58	2119	125 1 27	2130	123 11 13	2141
3	SUN	W.	63 15 36	2540	64 55 54	2554	66 35 52	2568	68 15 31	2582
	Aldebaran	W.	37 55 2	2347	39 39 53	2351	41 24 38	2357	43 9 14	2365
	VENUS	W.	26 35 0	2615	28 13 34	2629	29 51 50	2642	31 29 48	2656
	Spica	E.	97 39 27	2246	95 52 8	2259	94 5 8	2272	92 18 27	2285
	JUPITER	E.	114 4 24	2200	112 15 57	2213	110 27 49	2226	108 40 0	2239
4	SUN	W.	76 28 53	2655	78 6 33	2669	79 43 54	2684	81 20 55	2699
	Aldebaran	W.	51 49 15	2412	53 32 33	2422	55 15 36	2433	56 58 23	2445
	VENUS	W.	39 34 52	2729	41 10 54	2744	42 46 36	2758	44 21 59	2772
	Spica	E.	83 29 57	2353	81 45 15	2367	80 0 53	2381	78 16 51	2395
	JUPITER	E.	99 45 51	2306	98 0 0	2320	96 14 30	2334	94 29 20	2348
5	SUN	W.	89 21 2	2774	90 56 4	2788	92 30 47	2803	94 5 11	2817
	Aldebaran	W.	65 28 7	2505	67 9 13	2518	68 50 1	2530	70 30 32	2543
	VENUS	W.	52 14 2	2848	53 47 28	2862	55 20 35	2877	56 53 23	2891
	Pollux	W.	21 9 36	2467	22 51 35	2480	24 33 16	2492	26 14 41	2504
	Spica	E.	69 41 41	2465	67 59 38	2479	66 17 55	2493	64 36 31	2507
	JUPITER	E.	85 48 27	2416	84 5 15	2430	82 22 23	2443	80 39 49	2456
	Antares	E.	115 34 19	2458	113 52 7	2472	112 10 14	2485	110 28 40	2499
6	SUN	W.	101 52 34	2888	103 25 8	2902	104 57 24	2915	106 29 23	2928
	Aldebaran	W.	78 48 49	2605	80 27 37	2617	82 6 9	2629	83 44 24	2642
	VENUS	W.	64 32 49	2963	66 3 48	2977	67 34 29	2991	69 4 53	3004
	Pollux	W.	34 37 24	2566	36 17 5	2579	37 56 29	2591	39 35 36	2604
	Spica	E.	56 14 19	2574	54 34 49	2588	52 55 37	2601	51 16 43	2613
	JUPITER	E.	72 11 41	2522	70 30 58	2535	68 50 33	2547	67 10 25	2559
	Antares	E.	102 5 29	2564	100 25 45	2577	98 46 18	2590	97 7 9	2602
7	SUN	W.	114 5 10	2993	115 35 31	3005	117 5 37	3018	118 35 28	3030
	Aldebaran	W.	91 51 33	2701	93 28 11	2713	95 4 34	2724	96 40 42	2735
	VENUS	W.	76 32 47	3069	78 1 34	3082	79 30 6	3094	80 58 23	3106
	Pollux	W.	47 47 6	2662	49 24 37	2673	51 1 53	2684	52 38 54	2695
	Spica	E.	43 6 36	2678	41 29 27	2691	39 52 35	2704	38 15 59	2716
	JUPITER	E.	58 53 55	2618	57 15 25	2630	55 37 11	2641	53 59 12	2652
	Antares	E.	88 55 31	2661	87 17 59	2673	85 40 43	2684	84 3 42	2695
8	Aldebaran	W.	104 37 40	2791	106 12 20	2801	107 46 47	2812	109 20 59	2822
	VENUS	W.	88 16 13	3163	89 43 6	3174	91 9 45	3185	92 36 12	3195
	Pollux	W.	60 40 24	2747	62 16 1	2757	63 51 25	2766	65 26 37	2776
	Spica	E.	30 17 16	2782	28 42 24	2795	27 7 49	2809	25 33 32	2825
	JUPITER	E.	45 52 55	2704	44 16 21	2715	42 40 1	2725	41 3 54	2734
	Antares	E.	76 2 13	2748	74 26 36	2758	72 51 13	2768	71 16 3	2777

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LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	42 49 31	2400	44 33 6	2409	46 16 28	2419	47 59 36	2429
	Pollux	E.	28 50 54	2115	27 0 17	2125	25 9 55	2135	23 19 49	2145
	Spica	E.	119 29 29	2117	117 38 56	2126	115 48 37	2135	113 58 31	2144
2	Sun	W.	56 31 21	2488	58 12 51	2500	59 54 4	2513	61 34 59	2526
	Aldebaran	W.	30 55 13	2345	32 40 8	2342	34 25 7	2342	36 10 6	2344
	Venus	W.	19 57 53	2567	21 37 34	2578	23 16 59	2590	24 56 8	2602
	Spica	E.	104 51 46	2198	103 3 15	2209	101 15 1	2221	99 27 5	2233
	Jupiter	E.	121 21 16	2152	119 31 36	2164	117 42 14	2176	115 53 10	2188
3	Sun	W.	69 54 51	2596	71 33 51	2611	73 12 31	2625	74 50 52	2640
	Aldebaran	W.	44 53 39	2373	46 37 52	2382	48 21 53	2391	50 5 41	2401
	Venus	W.	33 7 28	2670	34 44 48	2684	36 21 49	2699	37 58 30	2713
	Spica	E.	90 32 5	2298	88 46 3	2312	87 0 21	2326	85 14 59	2339
	Jupiter	E.	106 52 31	2253	105 5 22	2266	103 18 32	2279	101 32 2	2292
4	Sun	W.	82 57 36	2714	84 33 57	2729	86 9 58	2744	87 45 40	2759
	Aldebaran	W.	58 40 53	2457	60 23 7	2469	62 5 4	2481	63 46 44	2493
	Venus	W.	45 57 3	2788	47 31 47	2803	49 6 11	2818	50 40 16	2833
	Spica	E.	76 33 9	2409	74 49 47	2423	73 6 45	2437	71 24 3	2451
	Jupiter	E.	92 44 30	2362	91 0 0	2375	89 15 49	2389	87 31 58	2403
5	Sun	W.	95 39 17	2831	97 13 4	2846	98 46 32	2860	100 19 42	2874
	Aldebaran	W.	72 10 46	2556	73 50 42	2568	75 30 21	2580	77 9 43	2592
	Venus	W.	58 25 53	2906	59 58 4	2920	61 29 57	2935	63 1 32	2949
	Pollux	W.	27 55 48	2517	29 36 38	2529	31 17 10	2541	32 57 26	2554
	Spica	E.	62 55 27	2520	61 14 42	2534	59 34 15	2548	57 54 8	2561
	Jupiter	E.	78 57 34	2470	77 15 38	2483	75 34 1	2496	73 52 42	2509
	Antares	E.	108 47 25	2512	107 6 29	2525	105 25 51	2538	103 45 31	2551
6	Sun	W.	108 1 6	2942	109 32 31	2955	111 3 40	2968	112 34 33	2981
	Aldebaran	W.	85 22 22	2654	87 0 4	2666	88 37 29	2678	90 14 39	2689
	Venus	W.	70 35 1	3018	72 4 52	3031	73 34 26	3044	75 3 44	3056
	Pollux	W.	41 14 26	2616	42 52 59	2627	44 31 17	2639	46 9 19	2650
	Spica	E.	49 38 6	2626	47 59 47	2639	46 21 46	2652	44 44 2	2665
	Jupiter	E.	65 30 34	2571	63 51 0	2583	62 11 42	2595	60 32 40	2607
	Antares	E.	95 28 16	2614	93 49 40	2626	92 11 21	2638	90 33 18	2650
7	Sun	W.	120 5 4	3042	121 34 25	3053	123 3 32	3064	124 32 25	3074
	Aldebaran	W.	98 16 35	2747	99 52 13	2758	101 27 36	2769	103 2 45	2780
	Venus	W.	82 26 25	3118	83 54 12	3129	85 21 46	3141	86 49 6	3152
	Pollux	W.	54 15 40	2706	55 52 11	2716	57 28 29	2727	59 4 33	2737
	Spica	E.	36 39 40	2729	35 3 38	2742	33 27 54	2755	31 52 26	2768
	Jupiter	E.	52 21 28	2663	50 43 59	2674	49 6 44	2684	47 29 43	2694
	Antares	E.	82 26 55	2706	80 50 23	2717	79 14 6	2728	77 38 3	2738
8	Aldebaran	W.	110 54 58	2833	112 28 43	2843	114 2 15	2853	115 35 34	2863
	Venus	W.	94 2 27	3206	95 28 29	3216	96 54 19	3226	98 19 57	3236
	Pollux	W.	67 1 36	2785	68 36 23	2795	70 10 57	2804	71 45 20	2813
	Spica	E.	23 59 36	2841	22 26 1	2858	20 52 48	2876	19 19 59	2897
	Jupiter	E.	39 27 59	2744	37 52 17	2753	36 16 48	2762	34 41 31	2771
	Antares	E.	69 41 5	2787	68 6 20	2796	66 31 47	2805	64 57 26	2814

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LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
8	*a* Aquilæ	E.	119 52 41	3933	118 39 55	3909	117 26 44	3886	116 13 10	3866
9	VENUS	W.	99 45 24	3245	101 10 39	3254	102 35 44	3264	104 0 38	3273
	Pollux	W.	73 19 31	2822	74 53 31	2830	76 27 19	2838	78 0 57	2846
	JUPITER	E.	33 6 25	2780	31 31 31	2789	29 56 49	2798	28 22 18	2806
	Antares	E.	63 23 17	2823	61 49 19	2831	60 15 32	2840	58 41 56	2848
	a Aquilæ	E.	110 0 45	3792	108 45 34	3783	107 30 14	3774	106 14 45	3767
10	VENUS	W.	111 2 31	3316	112 26 24	3324	113 50 8	3332	115 13 42	3339
	Pollux	W.	85 46 33	2885	87 19 11	2893	88 51 39	2900	90 23 58	2907
	JUPITER	E.	20 32 31	2849	18 59 7	2858	17 25 54	2867	15 52 52	2877
	Antares	E.	50 56 36	2888	49 24 2	2896	47 51 38	2903	46 19 23	2911
	a Aquilæ	E.	99 56 0	3752	98 40 9	3753	97 24 17	3753	96 8 26	3755
11	Pollux	W.	98 3 21	2940	99 34 49	2946	101 6 9	2952	102 37 21	2958
	Antares	E.	38 40 26	2946	37 9 5	2953	35 37 53	2959	34 6 49	2966
	a Aquilæ	E.	89 50 3	3779	88 34 39	3787	87 19 23	3795	86 4 15	3804
	Fomalhaut	E.	120 21 47	3175	118 55 8	3174	117 28 28	3175	116 1 49	3176
12	Pollux	W.	110 11 31	2987	111 42 0	2992	113 12 23	2997	114 42 39	3002
	Spica	W.	19 46 17	3055	21 15 22	3053	22 44 29	3052	24 13 38	3051
	Antares	E.	26 33 34	3000	25 3 21	3007	23 33 16	3014	22 3 20	3021
	a Aquilæ	E.	79 51 17	3862	78 37 19	3877	77 23 37	3893	76 10 10	3910
	Fomalhaut	E.	108 48 47	3181	107 22 16	3184	105 55 48	3186	104 29 22	3188
13	Spica	W.	31 39 32	3054	33 8 38	3056	34 37 42	3057	36 6 44	3059
	JUPITER	W.	16 20 59	2989	17 51 25	2993	19 21 46	2996	20 52 3	2999
	a Aquilæ	E.	70 7 32	4011	68 56 3	4036	67 44 59	4062	66 34 20	4089
	Fomalhaut	E.	97 17 56	3203	95 51 50	3206	94 25 47	3209	92 59 49	3212
	a Pegasi	E.	116 44 2	3489	115 23 26	3483	114 2 43	3477	112 41 52	3471
14	Spica	W.	43 31 16	3069	45 0 3	3071	46 28 47	3073	47 57 29	3075
	JUPITER	W.	28 22 40	3013	29 52 37	3015	31 22 31	3018	32 52 22	3020
	a Aquilæ	E.	60 48 18	4255	59 40 44	4296	58 33 48	4340	57 27 32	4387
	Fomalhaut	E.	85 50 57	3231	84 25 24	3234	82 59 55	3238	81 34 30	3242
	a Pegasi	E.	105 56 15	3450	104 34 55	3448	103 13 33	3446	101 52 8	3445
15	Spica	W.	55 20 30	3082	56 49 2	3082	58 17 33	3083	59 46 3	3083
	JUPITER	W.	40 21 0	3028	41 50 38	3029	43 20 14	3030	44 49 49	3031
	a Aquilæ	E.	52 7 37	4672	51 6 14	4743	50 5 51	4820	49 6 31	4903
	Fomalhaut	E.	74 28 38	3262	73 3 42	3266	71 38 51	3270	70 14 5	3275
	a Pegasi	E.	95 4 43	3440	93 43 12	3439	92 21 40	3440	91 0 9	3440
16	Spica	W.	67 8 32	3082	68 37 3	3081	70 5 36	3080	71 34 10	3078
	JUPITER	W.	52 17 38	3030	53 47 13	3030	55 16 48	3029	56 46 25	3028
	Antares	W.	21 14 55	3091	22 43 15	3088	24 11 39	3085	25 40 6	3082
	Fomalhaut	E.	63 11 38	3300	61 47 26	3306	60 23 21	3312	58 59 22	3318
	a Pegasi	E.	84 12 44	3446	82 51 19	3447	81 29 56	3449	80 8 34	3451
17	Spica	W.	78 57 39	3066	80 26 30	3062	81 55 26	3058	83 24 27	3054
	JUPITER	W.	64 15 4	3016	65 44 57	3013	67 14 54	3009	68 44 56	3005
	Antares	W.	33 3 20	3065	34 32 12	3061	36 1 8	3057	37 30 10	3052

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
8	α Aquilæ	E.	114 59 16	3847	113 45 2	3830	112 30 31	3816	111 15 45	3802
9	Venus	W.	105 25 21	3282	106 49 54	3291	108 14 16	3300	109 38 28	3308
	Pollux	W.	79 34 25	2854	81 7 42	2862	82 40 49	2870	84 13 46	2878
	Jupiter	E.	26 47 58	2815	25 13 49	2824	23 39 52	2832	22 6 6	2841
	Antares	E.	57 8 31	2857	55 35 17	2865	54 2 13	2873	52 29 20	2880
	α Aquilæ	E.	104 59 8	3762	103 43 26	3758	102 27 41	3755	101 11 52	3752
10	Venus	W.	116 37 8	3347	118 0 25	3355	119 23 33	3362	120 46 32	3369
	Pollux	W.	91 56 8	2914	93 28 9	2921	95 0 1	2927	96 31 45	2934
	Jupiter	E.	14 20 3	2887	12 47 27	2898	11 15 6	2912	9 43 3	2928
	Antares	E.	44 47 18	2918	43 15 22	2925	41 43 34	2932	40 11 56	2939
	α Aquilæ	E.	94 52 37	3758	93 36 51	3763	92 21 10	3768	91 5 34	3773
11	Pollux	W.	104 8 26	2964	105 39 23	2970	107 10 13	2976	108 40 55	2981
	Antares	E.	32 35 53	2973	31 5 6	2979	29 34 27	2986	28 3 56	2993
	α Aquilæ	E.	84 49 17	3814	83 34 29	3825	82 19 53	3837	81 5 29	3849
	Fomalhaut	E.	114 35 11	3176	113 8 33	3177	111 41 56	3178	110 15 21	3179
12	Pollux	W.	116 12 49	3007	117 42 53	3012	119 12 51	3017	120 42 43	3022
	Spica	W.	25 42 49	3050	27 12 0	3049	28 41 12	3050	30 10 23	3052
	Antares	E.	20 33 33	3029	19 3 56	3038	17 34 30	3047	16 5 16	3057
	α Aquilæ	E.	74 57 0	3928	73 44 8	3947	72 31 36	3967	71 19 24	3988
	Fomalhaut	E.	103 2 58	3190	101 36 37	3193	100 10 20	3196	98 44 6	3199
13	Spica	W.	37 35 44	3061	39 4 41	3063	40 33 35	3065	42 2 27	3067
	Jupiter	W.	22 22 17	3002	23 52 28	3005	25 22 35	3007	26 52 39	3010
	α Aquilæ	E.	65 24 7	4118	64 14 23	4150	63 5 9	4183	61 56 27	4218
	Fomalhaut	E.	91 33 54	3215	90 8 3	3219	88 42 17	3223	87 16 35	3227
	α Pegasi	E.	111 20 55	3465	109 59 52	3461	108 38 44	3457	107 17 31	3454
14	Spica	W.	49 26 9	3077	50 54 46	3078	52 23 22	3079	53 51 57	3081
	Jupiter	W.	34 22 10	3022	35 51 56	3024	37 21 39	3026	38 51 20	3027
	α Aquilæ	E.	56 21 59	4436	55 17 10	4489	54 13 8	4546	53 9 56	4607
	Fomalhaut	E.	80 9 10	3246	78 43 55	3250	77 18 45	3254	75 53 39	3258
	α Pegasi	E.	100 30 42	3443	99 9 14	3442	97 47 45	3441	96 26 14	3440
15	Spica	W.	61 14 33	3084	62 43 2	3083	64 11 32	3083	65 40 2	3083
	Jupiter	W.	46 19 23	3031	47 48 57	3032	49 18 30	3031	50 48 4	3031
	α Aquilæ	E.	48 8 19	4993	47 11 19	5090	46 15 34	5196	45 21 10	5311
	Fomalhaut	E.	68 49 25	3280	67 24 50	3284	66 0 20	3289	64 35 56	3294
	α Pegasi	E.	89 38 38	3441	88 17 8	3442	86 55 39	3443	85 34 11	3444
16	Spica	W.	73 2 47	3076	74 31 26	3074	76 0 7	3071	77 28 52	3069
	Jupiter	W.	58 16 4	3026	59 45 45	3024	61 15 28	3022	62 45 14	3019
	Antares	W.	27 8 37	3079	28 37 11	3076	30 5 50	3073	31 34 33	3069
	Fomalhaut	E.	57 35 31	3335	56 11 47	3332	54 48 12	3339	53 24 45	3347
	α Pegasi	E.	78 47 15	3453	77 25 58	3455	76 4 44	3458	74 43 33	3461
17	Spica	W.	84 53 33	3050	86 22 44	3045	87 52 1	3040	89 21 24	3034
	Jupiter	W.	70 15 3	3001	71 45 15	2996	73 15 33	2991	74 45 57	2985
	Antares	W.	38 59 18	3048	40 28 31	3043	41 57 51	3037	43 27 17	3031

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
17	Fomalhaut	E.	52 1 28	3356	50 38 21	3366	49 15 25	3376	47 52 41	3387
	α Pegasi	E.	73 22 25	3464	72 1 21	3467	70 40 20	3471	69 19 24	3476
	Sun	E.	133 35 5	3424	132 13 16	3420	130 51 23	3416	129 29 25	3412
18	Spica	W.	90 50 54	3028	92 20 31	3022	93 50 16	3016	95 20 9	3009
	Jupiter	W.	76 16 28	2979	77 47 6	2973	79 17 52	2967	80 48 46	2960
	Antares	W.	44 56 51	3025	46 26 32	3019	47 56 21	3012	49 26 19	3005
	Fomalhaut	E.	41 2 51	3470	39 41 53	3492	38 21 20	3518	37 1 16	3548
	α Pegasi	E.	62 36 8	3506	61 15 50	3513	59 55 40	3522	58 35 40	3532
	Sun	E.	122 38 13	3385	121 15 39	3378	119 52 57	3370	118 30 6	3362
19	Spica	W.	102 51 55	2968	104 22 48	2959	105 53 52	2949	107 25 9	2939
	Jupiter	W.	88 25 36	2920	89 57 29	2910	91 29 35	2901	93 1 53	2891
	Antares	W.	56 58 34	2963	58 29 33	2953	60 0 44	2943	61 32 8	2933
	α Pegasi	E.	51 58 47	3600	50 40 13	3620	49 22 0	3641	48 4 10	3665
	Sun	E.	111 33 32	3318	110 9 41	3308	108 45 39	3297	107 21 24	3286
20	Jupiter	W.	100 46 45	2835	102 20 28	2822	103 54 27	2809	105 28 43	2796
	Antares	W.	69 12 33	2876	70 45 22	2863	72 18 28	2850	73 51 51	2837
	Sun	E.	100 16 46	3225	98 51 6	3211	97 25 10	3197	95 58 56	3183
21	Jupiter	W.	113 24 27	2725	115 0 33	2710	116 36 59	2695	118 13 46	2679
	Antares	W.	81 43 15	2764	83 18 29	2749	84 54 4	2733	86 29 59	2717
	α Aquilæ	W.	44 46 5	4955	45 43 36	4821	46 42 55	4696	47 43 58	4579
	Sun	E.	88 43 23	3105	87 15 19	3088	85 46 55	3071	84 18 10	3053
22	Antares	W.	94 35 5	2633	96 13 15	2615	97 51 49	2598	99 30 47	2580
	α Aquilæ	W.	53 12 43	4104	54 22 41	4026	55 33 55	3952	56 46 22	3882
	Sun	E.	76 48 57	2963	75 17 58	2944	73 46 35	2925	72 14 48	2905
23	Antares	W.	107 51 52	2488	109 33 22	2470	111 15 18	2451	112 57 40	2432
	α Aquilæ	W.	63 5 11	3589	64 23 57	3540	65 43 37	3493	67 4 9	3447
	Sun	E.	64 29 38	2807	62 55 20	2787	61 20 35	2767	59 45 25	2747
24	α Aquilæ	W.	73 58 48	3254	75 23 53	3221	76 49 37	3190	78 15 58	3161
	Sun	E.	51 42 58	2649	50 5 10	2630	48 26 56	2611	46 48 16	2592
25	α Aquilæ	W.	85 35 50	3040	87 5 13	3022	88 34 59	3005	90 5 5	2991
	Sun	E.	38 28 39	2504	36 47 31	2488	35 6 1	2472	33 24 8	2456
29	Sun	W.	17 55 57	2309	19 41 43	2310	21 27 28	2313	23 13 8	2318
	Spica	E.	118 7 6	2004	116 13 38	2009	114 20 17	2015	112 27 6	2021
30	Sun	W.	31 59 18	2357	33 43 54	2367	35 28 15	2379	37 12 20	2391
	Spica	E.	103 4 12	2066	101 12 21	2077	99 20 47	2088	97 29 30	2101
	Jupiter	E.	116 25 27	2032	114 32 42	2043	112 40 15	2054	110 48 5	2066
31	Sun	W.	45 48 5	2461	47 30 13	2477	49 11 59	2492	50 53 23	2508
	Spica	E.	88 17 58	2168	86 28 42	2183	84 39 48	2198	82 51 17	2213
	Jupiter	E.	101 32 9	2134	99 42 1	2149	97 52 16	2163	96 2 53	2178

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
17	Fomalhaut	E.	46 30 10	3400	45 7 54	3415	43 45 54	3431	42 24 12	3449
	α Pegasi	E.	67 58 33	3480	66 37 47	3486	65 17 7	3492	63 56 34	3498
	SUN	E.	128 7 23	3408	126 45 15	3402	125 23 1	3396	124 0 40	3391
18	Spica	W.	96 50 11	3001	98 20 22	2993	99 50 42	2985	101 21 13	2977
	JUPITER	W.	82 19 49	2953	83 51 1	2946	85 22 22	2938	86 53 54	2929
	Antares	W.	50 56 26	2997	52 26 43	2989	53 57 9	2981	55 27 46	2972
	Fomalhaut	E.	35 41 45	3583	34 22 53	3622	33 4 42	3667	31 47 20	3722
	α Pegasi	E.	57 15 50	3543	55 56 12	3555	54 36 48	3569	53 17 39	3584
	SUN	E.	117 7 7	3354	115 43 58	3346	114 20 40	3337	112 57 11	3328
19	Spica	W.	108 56 38	2929	110 28 20	2918	112 0 16	2907	113 32 26	2895
	JUPITER	W.	94 34 24	2880	96 7 8	2869	97 40 6	2858	99 13 18	2847
	Antares	W.	63 3 45	2922	64 35 35	2911	66 7 40	2900	67 39 59	2888
	α Pegasi	E.	46 46 46	3693	45 29 51	3725	44 13 30	3760	42 57 46	3797
	SUN	E.	105 56 56	3275	104 32 15	3263	103 7 20	3250	101 42 10	3238
20	JUPITER	W.	107 3 15	2783	108 38 5	2769	110 13 13	2755	111 48 40	2740
	Antares	W.	75 25 31	2823	76 59 29	2809	78 33 45	2794	80 8 20	2779
	SUN	E.	94 32 26	3168	93 5 38	3153	91 38 32	3137	90 11 7	3121
21	JUPITER	W.	119 50 54	2663	121 28 23	2646	123 6 15	2629	124 44 30	2613
	Antares	W.	88 6 16	2701	89 42 54	2684	91 19 55	2667	92 57 19	2651
	α Aquilæ	W.	48 46 41	4471	49 50 59	4370	50 56 47	4275	52 4 3	4185
	SUN	E.	82 49 3	3036	81 19 35	3018	79 49 45	3000	78 19 33	2981
22	Antares	W.	101 10 10	2562	102 49 57	2543	104 30 10	2525	106 10 48	2507
	α Aquilæ	W.	58 0 0	3818	59 14 44	3757	60 30 31	3697	61 47 21	3641
	SUN	E.	70 42 36	2886	69 9 59	2867	67 36 58	2847	66 3 31	2827
23	Antares	W.	114 40 29	2414	116 23 44	2396	118 7 25	2377	119 51 33	2358
	α Aquilæ	W.	68 25 32	3405	69 47 43	3364	71 10 41	3325	72 34 23	3288
	SUN	E.	58 9 48	2728	56 33 45	2708	54 57 16	2688	53 20 20	2669
24	α Aquilæ	W.	79 42 54	3133	81 10 23	3108	82 38 23	3084	84 6 52	3061
	SUN	E.	45 9 10	2574	43 29 39	2556	41 49 43	2538	40 9 23	2521
25	α Aquilæ	W.	91 35 29	2978	93 6 10	2967	94 37 4	2957	96 8 11	2947
	SUN	E.	31 41 53	2441	29 59 17	2428	28 16 22	2416	26 33 10	2405
29	SUN	W.	24 58 42	2324	26 44 7	2330	28 29 23	2338	30 14 27	2347
	Spica	E.	110 34 5	2029	108 41 16	2038	106 48 41	2047	104 56 19	2056
30	SUN	W.	38 56 8	2404	40 39 37	2418	42 22 46	2432	44 5 36	2446
	Spica	E.	95 38 32	2113	93 47 53	2126	91 57 34	2139	90 7 35	2153
	JUPITER	E.	108 56 14	2079	107 4 42	2092	105 13 30	2105	103 22 39	2119
31	SUN	W.	52 34 25	2525	54 15 3	2542	55 55 18	2559	57 35 9	2576
	Spica	E.	81 3 9	2229	79 15 25	2245	77 28 5	2262	75 41 9	2278
	JUPITER	E.	94 13 53	2194	92 25 17	2210	90 37 5	2227	88 49 17	2243

AT GREENWICH APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Semi-diameter.	Sidereal Time of Semi-diameter Passing Meridian.	Equation of Time, to be Subtracted from Added to Apparent Time.	Diff. for 1 Hour.
		h m s	s	° ′ ″	″	′ ″	s	m s	s
Thur.	1	4 32 52.15	+ 10.220	N.21 56 32.7	+ 21.24	15 48.05	68.33	2 31.88	0.363
Frid.	2	4 36 57.63	10.236	22 4 50.9	20.28	15 47.91	68.39	2 22.98	0.379
Sat.	3	4 41 3.49	10.252	22 12 45.9	19.31	15 47.78	68.45	2 13.70	0.394
SUN.	4	4 45 9.71	+ 10.267	22 20 17.6	+ 18.33	15 47.65	68.50	2 4.06	0.409
Mon.	5	4 49 16.28	10.281	22 27 25.7	17.35	15 47.53	68.55	1 54.08	0.423
Tues.	6	4 53 23.17	10.294	22 34 10.2	16.36	15 47.41	68.60	1 43.78	0.436
Wed.	7	4 57 30.37	+ 10.306	22 40 31.0	+ 15.37	15 47.30	68.64	1 33.17	0.448
Thur.	8	5 1 37.87	10.318	22 46 28.0	14.38	15 47.19	68.68	1 22.26	0.460
Frid.	9	5 5 45.65	10.329	22 52 1.0	13.38	15 47.08	68.72	1 11.07	0.471
Sat.	10	5 9 53.69	+ 10.340	22 57 10.0	+ 12.37	15 46.98	68.76	0 59.62	0.482
SUN.	11	5 14 1.97	10.350	23 1 54.8	11.36	15 46.88	68.79	0 47.93	0.492
Mon.	12	5 18 10.48	10.359	23 6 15.3	10.35	15 46.78	68.82	0 36.01	0.501
Tues.	13	5 22 19.20	+ 10.367	23 10 11.4	+ 9.33	15 46.68	68.85	0 23.88	0.509
Wed.	14	5 26 28.10	10.374	23 13 43.1	8.31	15 46.59	68.87	0 11.57	0.516
Thur.	15	5 30 37.17	10.381	23 16 50.3	7.29	15 46.50	68.89	0 0.91	0.523
Frid.	16	5 34 46.40	+ 10.387	23 19 32.9	+ 6.26	15 46.41	68.91	0 13.54	0.529
Sat.	17	5 38 55.76	10.392	23 21 50.9	5.23	15 46.33	68.92	0 26.30	0.534
SUN.	18	5 43 5.22	10.396	23 23 44.2	4.20	15 46.25	68.93	0 39.17	0.538
Mon.	19	5 47 14.76	+ 10.399	23 25 12.7	+ 3.17	15 46.18	68.94	0 52.13	0.541
Tues.	20	5 51 24.37	10.402	23 26 16.5	2.14	15 46.11	68.94	1 5.15	0.543
Wed.	21	5 55 34.03	10.403	23 26 55.5	1.11	15 46.04	68.94	1 18.21	0.545
Thur.	22	5 59 43.71	+ 10.403	23 27 9.7	+ 0.07	15 45.98	68.94	1 31.29	0.545
Frid.	23	6 3 53.38	10.402	23 26 59.0	− 0.96	15 45.92	68.93	1 44.36	0.544
Sat.	24	6 8 3.01	10.400	23 26 23.5	1.99	15 45.87	68.93	1 57.40	0.542
SUN.	25	6 12 12.58	+ 10.397	23 25 23.2	− 3.03	15 45.82	68.92	2 10.38	0.539
Mon.	26	6 16 22.06	10.393	23 23 58.1	4.06	15 45.78	68.90	2 23.27	0.535
Tues.	27	6 20 31.42	10.387	23 22 8.3	5.09	15 45.75	68.88	2 36.03	0.529
Wed.	28	6 24 40.63	+ 10.380	23 19 53.8	− 6.12	15 45.73	68.86	2 48.64	0.522
Thur.	29	6 28 49.66	10.372	23 17 14.6	7.15	15 45.71	68.84	3 1.08	0.514
Frid.	30	6 32 58.48	10.363	23 14 10.9	8.17	15 45.70	68.81	3 13.31	0.505
Sat.	31	6 37 7.07	+ 10.353	N.23 10 42.7	− 9.19	15 45.69	68.78	3 25.31	0.495

NOTE.—The mean time of semidiameter passing the meridian may be found by subtracting 0s.19 from the sidereal time. The sign + prefixed to the hourly change of declination indicates that north declinations are increasing; the sign − indicates that north declinations are decreasing.

AT GREENWICH MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Equation of Time, to be Added to / Subtracted from Mean Time.	Diff. for 1 Hour.	Sidereal Time, or Right Ascension of Mean Sun.
		h m s	s	° ′ ″	″	m s	s	h m s
Thur.	1	4 32 52.58	+ 10.219	N.21 56 33.6	+ 21.23	2 31.87	− 0.363	4 35 24.45
Frid.	2	4 36 58.04	10.235	22 4 51.7	20.27	2 22.97	0.379	4 39 21.00
Sat.	3	4 41 3.87	10.251	22 12 46.6	19.30	2 13.69	0.394	4 43 17.56
SUN.	4	4 45 10.07	+ 10.265	22 20 18.2	+ 18.33	2 4.05	− 0.409	4 47 14.12
Mon.	5	4 49 16.61	10.279	22 27 26.3	17.35	1 54.07	0.423	4 51 10.68
Tues.	6	4 53 23.47	10.292	22 34 10.7	16.36	1 43.77	0.436	4 55 7.24
Wed.	7	4 57 30.64	+ 10.305	22 40 31.4	+ 15.37	1 33.15	− 0.448	4 59 3.79
Thur.	8	5 1 38.11	10.317	22 46 28.3	14.37	1 22.24	0.460	5 3 0.35
Frid.	9	5 5 45.85	10.328	22 52 1.3	13.37	1 11.06	0.471	5 6 56.91
Sat.	10	5 9 53.86	+ 10.339	22 57 10.2	+ 12.37	0 59.61	− 0.482	5 10 53.47
SUN.	11	5 14 2.11	10.348	23 1 54.9	11.36	0 47.92	0.492	5 14 50.03
Mon.	12	5 18 10.58	10.357	23 6 15.4	10.35	0 36.00	0.501	5 18 46.59
Tues.	13	5 22 19.26	+ 10.366	23 10 11.5	+ 9.33	0 23.88	− 0.509	5 22 43.14
Wed.	14	5 26 28.13	10.373	23 13 43.2	8.31	0 11.57	0.516	5 26 39.70
Thur.	15	5 30 37.17	10.380	23 16 50.3	7.29	0 0.91	0.523	5 30 36.26
Frid.	16	5 34 46.36	+ 10.386	23 19 32.9	+ 6.26	0 13.54	− 0.529	5 34 32.82
Sat.	17	5 38 55.68	10.391	23 21 50.9	5.23	0 26.30	0.534	5 38 29.38
SUN.	18	5 43 5.10	10.395	23 23 44.2	4.20	0 39.17	0.538	5 42 25.94
Mon.	19	5 47 14.61	+ 10.398	23 25 12.7	+ 3.17	0 52.12	− 0.541	5 46 22.49
Tues.	20	5 51 24.19	10.400	23 26 16.5	2.14	1 5.13	0.543	5 50 19.05
Wed.	21	5 55 33.81	10.401	23 26 55.5	1.11	1 18.19	0.545	5 54 15.61
Thur.	22	5 59 43.44	+ 10.402	23 27 9.6	+ 0.07	1 31.27	− 0.545	5 58 12.17
Frid.	23	6 3 53.07	10.401	23 26 59.0	− 0.96	1 44.34	0.544	6 2 8.73
Sat.	24	6 8 2.67	10.399	23 26 23.6	1.99	1 57.38	0.542	6 6 5.29
SUN.	25	6 12 12.21	+ 10.396	23 25 23.3	− 3.03	2 10.36	− 0.539	6 10 1.85
Mon.	26	6 16 21.65	10.391	23 23 58.3	4.06	2 23.25	0.535	6 13 58.40
Tues.	27	6 20 30.97	10.385	23 22 8.5	5.09	2 36.01	0.529	6 17 54.96
Wed.	28	6 24 40.14	+ 10.379	23 19 54.1	− 6.12	2 48.62	− 0.522	6 21 51.52
Thur.	29	6 28 49.13	10.371	23 17 15.0	7.14	3 1.06	0.514	6 25 48.08
Frid.	30	6 32 57.92	10.362	23 14 11.3	8.16	3 13.29	0.505	6 29 44.64
Sat.	31	6 37 6.48	+ 10.351	N.23 10 43.2	− 9.18	3 25.29	− 0.495	6 33 41.20

NOTE.—The semidiameter for mean noon may be assumed the same as that for apparent noon.
The sign + prefixed to the hourly change of declination indicates that north declinations are increasing; the sign − indicates that north declinations are decreasing.

Diff. for 1 Hour, + 9s.8565. (Table III.)

AT GREENWICH MEAN NOON.

Day of the Month.	Day of the Year.	THE SUN'S TRUE LONGITUDE. λ	THE SUN'S TRUE LONGITUDE. λ′	Diff. for 1 Hour.	THE SUN'S LATITUDE.	Logarithm of the Radius Vector of the Earth.	Diff. for 1 Hour.	Mean Time of Sidereal Noon.
		° ′ ″	′ ″	″	″			h m s
1	152	69 52 26.3	52 16.8	143.76	+ 0.56	0.006 1209	+ 25.9	19 21 24.76
2	153	70 49 55.9	49 46.2	143.70	0.57	0.006 1821	25.1	19 17 28.85
3	154	71 47 24.1	47 14.2	143.65	0.53	0.006 2414	24.3	19 13 32.94
4	155	72 44 51.1	44 41.0	143.60	+ 0.47	0.006 2988	+ 23.5	19 9 37.03
5	156	73 42 16.9	42 6.6	143.55	0.39	0.006 3544	22.8	19 5 41.12
6	157	74 39 41.5	39 31.0	143.50	0.28	0.006 4084	22.2	19 1 45.20
7	158	75 37 5.0	36 54.3	143.46	+ 0.15	0.006 4609	+ 21.5	18 57 49.29
8	159	76 34 27.4	34 16.6	143.41	+ 0.03	0.006 5119	20.9	18 53 53.38
9	160	77 31 48.8	31 37.9	143.37	− 0.09	0.006 5614	20.3	18 49 57.47
10	161	78 29 9.3	28 58.2	143.34	− 0.21	0.006 6095	+ 19.8	18 46 1.55
11	162	79 26 29.0	26 17.7	143.31	0.32	0.006 6562	19.2	18 42 5.64
12	163	80 23 48.0	23 36.4	143.28	0.42	0.006 7016	18.6	18 38 9.73
13	164	81 21 6.3	20 54.5	143.25	− 0.48	0.006 7456	+ 18.0	18 34 13.82
14	165	82 18 24.0	18 12.0	143.23	0.53	0.006 7881	17.4	18 30 17.90
15	166	83 15 41.1	15 29.0	143.21	0.55	0.006 8292	16.8	18 26 21.99
16	167	84 12 57.8	12 45.5	143.19	− 0.53	0.006 8688	+ 16.1	18 22 26.08
17	168	85 10 14.2	10 1.7	143.17	0.50	0.006 9067	15.4	18 18 30.17
18	169	86 7 30.2	7 17.5	143.16	0.44	0.006 9429	14.7	18 14 34.25
19	170	87 4 46.0	4 33.1	143.15	− 0.35	0.006 9774	+ 13.9	18 10 38.34
20	171	88 2 1.6	1 48.5	143.15	0.24	0.007 0099	13.1	18 6 42.43
21	172	88 59 17.0	59 3.8	143.14	− 0.12	0.007 0403	12.2	18 2 46.52
22	173	89 56 32.3	56 18.9	143.13	+ 0.03	0.007 0685	+ 11.2	17 58 50.60
23	174	90 53 47.5	53 33.9	143.13	0.17	0.007 0943	10.2	17 54 54.69
24	175	91 51 2.5	50 48.7	143.12	0.30	0.007 1177	9.2	17 50 58.78
25	176	92 48 17.4	48 3.4	143.11	+ 0.42	0.007 1384	+ 8.1	17 47 2.86
26	177	93 45 32.0	45 17.9	143.10	0.51	0.007 1564	7.0	17 43 6.95
27	178	94 42 46.4	42 32.1	143.09	0.58	0.007 1717	5.8	17 39 11.04
28	179	95 40 0.5	39 46.0	143.08	+ 0.61	0.007 1843	+ 4.7	17 35 15.13
29	180	96 37 14.2	36 59.5	143.06	0.63	0.007 1943	3.6	17 31 19.22
30	181	97 34 27.6	34 12.7	143.05	0.61	0.007 2017	2.6	17 27 23.30
31	182	98 31 40.6	31 25.5	143.03	+ 0.55	0.007 2067	+ 1.6	17 23 27.39

NOTE.—The longitudes in the column λ are referred to the true equinox of their own date, while those in the column λ′ are referred to the mean equinox of the beginning of the Besselian fictitious year.

Diff. for 1 Hour, − 9ˢ.8296. (Table II.)

GREENWICH MEAN TIME.

THE MOON'S

Day of the Month.	SEMIDIAMETER. Noon.	SEMIDIAMETER. Midnight.	HORIZONTAL PARALLAX. Noon.	Diff. for 1 Hour.	HORIZONTAL PARALLAX. Midnight.	Diff. for 1 Hour.	UPPER TRANSIT. Meridian of Greenwich.	Diff. for 1 Hour.	AGE. Noon.
	′ ″	′ ″	′ ″	″	′ ″	″	h m	m	d
1	16 11.9	16 4.7	59 21.0	− 2.15	58 54.7	− 2.22	4 26.3	2.37	4.2
2	15 57.4	15 50.1	58 27.8	2.24	58 1.0	2.21	5 20.2	2.13	5.2
3	15 42.9	15 36.0	57 34.7	2.15	57 9.3	2.07	6 8.9	1.94	6.2
4	15 29.4	15 23.2	56 45.1	− 1.96	56 22.3	− 1.83	6 53.7	1.81	7.2
5	15 17.4	15 12.1	56 1.1	1.70	55 41.6	1.55	7 36.2	1.73	8.2
6	15 7.3	15 2.9	55 23.9	1.40	55 7.9	1.26	8 17.6	1.72	9.2
7	14 59.1	14 55.7	54 53.7	− 1.11	54 41.3	− 0.96	8 59.1	1.74	10.2
8	14 52.8	14 50.3	54 30.6	0.83	54 21.5	0.70	9 41.8	1.81	11.2
9	14 48.2	14 46.5	54 13.9	0.57	54 7.8	0.45	10 26.4	1.90	12.2
10	14 45.3	14 44.4	54 3.2	− 0.33	54 0.0	− 0.21	11 13.4	2.01	13.2
11	14 43.9	14 43.8	53 58.1	− 0.10	53 57.6	+ 0.01	12 2.6	2.10	14.2
12	14 44.0	14 44.6	53 58.4	+ 0.12	54 0.6	0.24	12 53.4	2.14	15.2
13	14 45.5	14 46.9	54 4.1	+ 0.35	54 9.1	+ 0.47	13 44.8	2.13	16.2
14	14 48.6	14 50.8	54 15.5	0.60	54 23.5	0.73	14 35.4	2.09	17.2
15	14 53.4	14 56.5	54 33.1	0.87	54 44.3	1.01	15 24.5	2.00	18.2
16	15 0.0	15 4.0	54 57.2	+ 1.15	55 11.9	+ 1.30	16 11.5	1.93	19.2
17	15 8.5	15 13.5	55 28.5	1.46	55 46.9	1.61	16 56.9	1.86	20.2
18	15 19.0	15 25.0	56 7.0	1.75	56 28.8	1.89	17 41.1	1.83	21.2
19	15 31.3	15 38.1	56 52.2	+ 2.01	57 17.0	+ 2.11	18 25.3	1.86	22.2
20	15 45.2	15 52.5	57 42.9	2.19	58 9.5	2.23	19 10.8	1.94	23.2
21	15 59.8	16 7.1	58 36.5	2.24	59 3.3	2.20	19 59.0	2.09	24.2
22	16 14.2	16 20.9	59 29.4	+ 2.12	59 54.2	+ 1.98	20 51.4	2.29	25.2
23	16 27.1	16 32.6	60 17.0	1.79	60 37.1	1.54	21 49.1	2.53	26.2
24	16 37.2	16 40.7	60 53.9	1.24	61 6.8	0.89	22 52.4	2.73	27.2
25	16 43.0	16 44.0	61 15.2	+ 0.50	61 18.8	+ 0.10	23 59.3	2.82	28.2
26	16 43.6	16 41.9	61 17.5	− 0.31	61 11.3	− 0.71	d	. .	29.2
27	16 39.0	16 34.8	61 0.4	1.09	60 45.1	1.44	1 6.6	2.76	0.9
28	16 29.6	16 23.5	60 25.9	− 1.74	60 3.4	− 1.98	2 10.4	2.55	1.9
29	16 16.6	16 9.3	59 38.4	2.16	59 11.5	2.29	3 8.7	2.30	2.9
30	16 1.7	15 53.9	58 43.4	2.36	58 14.8	2.38	4 1.3	2.08	3.9
31	15 46.1	15 38.5	57 46.3	− 2.35	57 18.4	− 2.28	4 49.0	1.90	4.9

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 1.			
	h m s	s	° ′ ″	″
0	8 51 34.81	2.4769	N.23 3 6.2	9.623
1	8 54 3.15	2.4678	22 53 24.8	9.756
2	8 56 30.95	2.4588	22 43 35.5	9.886
3	8 58 58.21	2.4498	22 33 38.5	10.013
4	9 1 24.92	2.4407	22 23 33.9	10.138
5	9 3 51.09	2.4316	22 13 21.9	10.261
6	9 6 16.71	2.4225	22 3 2.6	10.383
7	9 8 41.79	2.4135	21 52 36.0	10.503
8	9 11 6.33	2.4044	21 42 2.3	10.619
9	9 13 30.32	2.3953	21 31 21.7	10.734
10	9 15 53.77	2.3863	21 20 34.2	10.848
11	9 18 16.68	2.3773	21 9 40.0	10.959
12	9 20 39.05	2.3683	20 58 39.1	11.069
13	9 23 0.88	2.3594	20 47 31.7	11.176
14	9 25 22.18	2.3505	20 36 18.0	11.281
15	9 27 42.94	2.3416	20 24 58.0	11.384
16	9 30 3.17	2.3328	20 13 31.9	11.485
17	9 32 22.88	2.3241	20 1 59.8	11.585
18	9 34 42.06	2.3153	19 50 21.7	11.683
19	9 37 0.71	2.3065	19 38 37.8	11.779
20	9 39 18.84	2.2978	19 26 48.2	11.873
21	9 41 36.45	2.2893	19 14 53.0	11.965
22	9 43 53.55	2.2807	19 2 52.4	12.054
23	9 46 10.13	2.2722	N.18 50 46.5	12.142
	FRIDAY 2.			
0	9 48 26.21	2.2638	N.18 38 35.3	12.229
1	9 50 41.78	2.2553	18 26 19.0	12.313
2	9 52 56.85	2.2470	18 13 57.7	12.396
3	9 55 11.42	2.2388	18 1 31.5	12.478
4	9 57 25.50	2.2305	17 49 0.5	12.557
5	9 59 39.08	2.2223	17 36 24.7	12.634
6	10 1 52.18	2.2143	17 23 44.3	12.710
7	10 4 4.79	2.2063	17 10 59.5	12.783
8	10 6 16.93	2.1983	16 58 10.3	12.856
9	10 8 28.59	2.1904	16 45 16.8	12.928
10	10 10 39.78	2.1826	16 32 19.0	12.997
11	10 12 50.50	2.1749	16 19 17.2	13.063
12	10 15 0.77	2.1673	16 6 11.4	13.129
13	10 17 10.58	2.1598	15 53 1.7	13.193
14	10 19 19.94	2.1523	15 39 48.3	13.255
15	10 21 28.85	2.1448	15 26 31.1	13.317
16	10 23 37.32	2.1375	15 13 10.3	13.376
17	10 25 45.35	2.1303	14 59 46.0	13.433
18	10 27 52.95	2.1231	14 46 18.3	13.489
19	10 30 0.12	2.1159	14 32 47.3	13.544
20	10 32 6.86	2.1089	14 19 13.0	13.598
21	10 34 13.19	2.1021	14 5 35.6	13.649
22	10 36 19.11	2.0953	13 51 55.1	13.699
23	10 38 24.62	2.0885	13 38 11.7	13.748
24	10 40 29.73	2.0818	N.13 24 25.4	13.795

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 3.			
	h m s	s	° ′ ″	″
0	10 40 29.73	2.0818	N.13 24 25.4	13.795
1	10 42 34.44	2.0753	13 10 36.3	13.841
2	10 44 38.76	2.0688	12 56 44.5	13.886
3	10 46 42.69	2.0623	12 42 50.0	13.929
4	10 48 46.24	2.0561	12 28 53.0	13.971
5	10 50 49.42	2.0499	12 14 53.5	14.011
6	10 52 52.23	2.0438	12 0 51.7	14.049
7	10 54 54.67	2.0377	11 46 47.6	14.087
8	10 56 56.75	2.0318	11 32 41.3	14.123
9	10 58 58.48	2.0259	11 18 32.8	14.159
10	11 0 59.86	2.0201	11 4 22.2	14.192
11	11 3 0.89	2.0144	10 50 9.7	14.224
12	11 5 1.59	2.0089	10 35 55.3	14.256
13	11 7 1.96	2.0034	10 21 39.0	14.286
14	11 9 2.00	1.9980	10 7 21.0	14.314
15	11 11 1.72	1.9927	9 53 1.3	14.342
16	11 13 1.12	1.9874	9 38 39.9	14.369
17	11 15 0.21	1.9823	9 24 17.0	14.393
18	11 16 59.00	1.9773	9 9 52.7	14.417
19	11 18 57.49	1.9723	8 55 27.0	14.440
20	11 20 55.68	1.9674	8 40 59.9	14.462
21	11 22 53.58	1.9627	8 26 31.6	14.482
22	11 24 51.20	1.9581	8 12 2.1	14.501
23	11 26 48.55	1.9535	N. 7 57 31.5	14.519
	SUNDAY 4.			
0	11 28 45.62	1.9490	N. 7 42 59.8	14.537
1	11 30 42.43	1.9446	7 28 27.1	14.553
2	11 32 38.97	1.9403	7 13 53.5	14.568
3	11 34 35.26	1.9361	6 59 19.0	14.582
4	11 36 31.30	1.9319	6 44 43.7	14.595
5	11 38 27.09	1.9279	6 30 7.6	14.607
6	11 40 22.65	1.9240	6 15 30.9	14.617
7	11 42 17.97	1.9201	6 0 53.6	14.626
8	11 44 13.06	1.9163	5 46 15.8	14.635
9	11 46 7.93	1.9127	5 31 37.4	14.643
10	11 48 2.58	1.9091	5 16 58.6	14.649
11	11 49 57.02	1.9057	5 2 19.5	14.655
12	11 51 51.25	1.9023	4 47 40.0	14.660
13	11 53 45.29	1.8990	4 33 0.3	14.664
14	11 55 39.13	1.8958	4 18 20.3	14.667
15	11 57 32.78	1.8926	4 3 40.2	14.668
16	11 59 26.24	1.8895	3 49 0.1	14.669
17	12 1 19.52	1.8865	3 34 19.9	14.670
18	12 3 12.62	1.8837	3 19 39.7	14.669
19	12 5 5.56	1.8809	3 4 59.6	14.667
20	12 6 58.33	1.8782	2 50 19.7	14.664
21	12 8 50.94	1.8756	2 35 39.9	14.661
22	12 10 43.40	1.8731	2 21 0.4	14.656
23	12 12 35.71	1.8706	2 6 21.2	14.651
24	12 14 27.87	1.8683	N. 1 51 42.3	14.645

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	h m s	s	° ′ ″	″
MONDAY 5.				
0	12 14 27.87	1.8683	N. 1 51 42.3	14.645
1	12 16 19.90	1.8660	1 37 3.8	14.638
2	12 18 11.79	1.8638	1 22 25.8	14.629
3	12 20 3.56	1.8618	1 7 48.3	14.620
4	12 21 55.20	1.8597	0 53 11.4	14.610
5	12 23 46.72	1.8578	0 38 35.1	14.600
6	12 25 38.13	1.8559	0 23 59.4	14.589
7	12 27 29.43	1.8542	N. 0 9 24.4	14.578
8	12 29 20.63	1.8525	S. 0 5 9.9	14.564
9	12 31 11.73	1.8509	0 19 43.3	14.549
10	12 33 2.74	1.8494	0 34 15.8	14.534
11	12 34 53.66	1.8479	0 48 47.4	14.519
12	12 36 44.49	1.8466	1 3 18.1	14.503
13	12 38 35.25	1.8453	1 17 47.8	14.486
14	12 40 25.93	1.8442	1 32 16.4	14.468
15	12 42 16.55	1.8431	1 46 43.9	14.449
16	12 44 7.10	1.8420	2 1 10.3	14.429
17	12 45 57.59	1.8410	2 15 35.4	14.408
18	12 47 48.02	1.8402	2 29 59.3	14.388
19	12 49 38.41	1.8394	2 44 21.9	14.366
20	12 51 28.75	1.8387	2 58 43.2	14.343
21	12 53 19.05	1.8380	3 13 3.1	14.320
22	12 55 9.31	1.8374	3 27 21.6	14.296
23	12 56 59.54	1.8369	S. 3 41 38.6	14.270
TUESDAY 6.				
0	12 58 49.74	1.8365	S. 3 55 54.9	14.244
1	13 0 39.92	1.8363	4 10 7.9	14.218
2	13 2 30.09	1.8360	4 24 20.1	14.190
3	13 4 20.24	1.8358	4 38 30.7	14.162
4	13 6 10.38	1.8357	4 52 39.6	14.133
5	13 8 0.52	1.8357	5 6 46.7	14.103
6	13 9 50.66	1.8357	5 20 52.0	14.073
7	13 11 40.80	1.8358	5 34 55.5	14.042
8	13 13 30.95	1.8360	5 48 57.1	14.010
9	13 15 21.12	1.8363	6 2 56.7	13.978
10	13 17 11.30	1.8366	6 16 54.4	13.944
11	13 19 1.51	1.8370	6 30 50.0	13.909
12	13 20 51.74	1.8374	6 44 43.5	13.874
13	13 22 42.00	1.8380	6 58 34.9	13.839
14	13 24 32.30	1.8387	7 12 24.2	13.803
15	13 26 22.64	1.8393	7 26 11.2	13.765
16	13 28 13.02	1.8401	7 39 56.0	13.728
17	13 30 3.45	1.8409	7 53 38.5	13.689
18	13 31 53.93	1.8418	8 7 18.7	13.649
19	13 33 44.46	1.8427	8 20 56.4	13.608
20	13 35 35.05	1.8438	8 34 31.7	13.568
21	13 37 25.71	1.8449	8 48 4.6	13.527
22	13 39 16.44	1.8461	9 1 34.9	13.483
23	13 41 7.24	1.8473	9 15 2.6	13.440
24	13 42 58.11	1.8485	S. 9 28 27.7	13.396

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	h m s	s	° ′ ″	″
WEDNESDAY 7.				
0	13 42 58.11	1.8485	S. 9 28 27.7	13.396
1	13 44 49.06	1.8499	9 41 50.1	13.351
2	13 46 40.10	1.8513	9 55 9.8	13.306
3	13 48 31.22	1.8528	10 8 26.8	13.260
4	13 50 22.43	1.8543	10 21 41.0	13.213
5	13 52 13.73	1.8558	10 34 52.3	13.165
6	13 54 5.13	1.8576	10 48 0.8	13.117
7	13 55 56.64	1.8593	11 1 6.3	13.067
8	13 57 48.25	1.8611	11 14 8.8	13.017
9	13 59 39.97	1.8629	11 27 8.3	12.966
10	14 1 31.80	1.8648	11 40 4.7	12.914
11	14 3 23.74	1.8668	11 52 58.0	12.862
12	14 5 15.81	1.8688	12 5 48.2	12.809
13	14 7 8.00	1.8708	12 18 35.1	12.755
14	14 9 0.31	1.8730	12 31 18.8	12.701
15	14 10 52.76	1.8753	12 43 59.2	12.645
16	14 12 45.34	1.8774	12 56 36.2	12.589
17	14 14 38.05	1.8797	13 9 9.9	12.532
18	14 16 30.90	1.8821	13 21 40.1	12.474
19	14 18 23.90	1.8845	13 34 6.8	12.416
20	14 20 17.04	1.8869	13 46 30.0	12.358
21	14 22 10.33	1.8894	13 58 49.7	12.298
22	14 24 3.77	1.8920	14 11 5.7	12.236
23	14 25 57.37	1.8946	S. 14 23 18.0	12.174
THURSDAY 8.				
0	14 27 51.12	1.8973	S. 14 35 26.6	12.112
1	14 29 45.04	1.9000	14 47 31.4	12.048
2	14 31 39.12	1.9027	14 59 32.4	11.984
3	14 33 33.36	1.9054	15 11 29.5	11.920
4	14 35 27.77	1.9083	15 23 22.8	11.855
5	14 37 22.36	1.9113	15 35 12.1	11.788
6	14 39 17.12	1.9142	15 46 57.4	11.721
7	14 41 12.06	1.9172	15 58 38.6	11.653
8	14 43 7.18	1.9202	16 10 15.8	11.585
9	14 45 2.48	1.9233	16 21 48.8	11.516
10	14 46 57.97	1.9264	16 33 17.7	11.446
11	14 48 53.65	1.9295	16 44 42.3	11.374
12	14 50 49.51	1.9327	16 56 2.6	11.302
13	14 52 45.57	1.9359	17 7 18.5	11.229
14	14 54 41.82	1.9392	17 18 30.1	11.156
15	14 56 38.27	1.9424	17 29 37.2	11.082
16	14 58 34.91	1.9458	17 40 39.9	11.007
17	15 0 31.76	1.9492	17 51 38.0	10.930
18	15 2 28.81	1.9525	18 2 31.5	10.853
19	15 4 26.06	1.9559	18 13 20.4	10.776
20	15 6 23.52	1.9594	18 24 4.6	10.698
21	15 8 21.19	1.9628	18 34 44.1	10.618
22	15 10 19.06	1.9663	18 45 18.8	10.538
23	15 12 17.15	1.9699	18 55 48.7	10.458
24	15 14 15.45	1.9735	S. 19 6 13.7	10.376

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 9.			
	h m s	s	° ′ ″	″
0	15 14 15.45	1.9735	S. 19 6 13.7	10.376
1	15 16 13.97	1.9771	19 16 33.8	10.293
2	15 18 12.70	1.9807	19 26 48.9	10.210
3	15 20 11.65	1.9843	19 36 59.0	10.127
4	15 22 10.82	1.9879	19 47 4.1	10.042
5	15 24 10.20	1.9916	19 57 4.0	9.956
6	15 26 9.81	1.9953	20 6 58.8	9.870
7	15 28 9.64	1.9991	20 16 48.4	9.782
8	15 30 9.70	2.0028	20 26 32.7	9.693
9	15 32 9.98	2.0065	20 36 11.6	9.604
10	15 34 10.48	2.0103	20 45 45.2	9.516
11	15 36 11.21	2.0140	20 55 13.5	9.426
12	15 38 12.16	2.0178	21 4 36.3	9.334
13	15 40 13.34	2.0216	21 13 53.6	9.242
14	15 42 14.75	2.0254	21 23 5.3	9.148
15	15 44 16.39	2.0292	21 32 11.4	9.055
16	15 46 18.25	2.0330	21 41 11.9	8.961
17	15 48 20.35	2.0369	21 50 6.7	8.865
18	15 50 22.68	2.0407	21 58 55.7	8.769
19	15 52 25.23	2.0444	22 7 39.0	8.673
20	15 54 28.01	2.0483	22 16 16.4	8.575
21	15 56 31.03	2.0522	22 24 48.0	8.477
22	15 58 34.28	2.0560	22 33 13.6	8.377
23	16 0 37.75	2.0598	S. 22 41 33.2	8.277
	SATURDAY 10.			
0	16 2 41.45	2.0636	S. 22 49 46.8	8.176
1	16 4 45.38	2.0674	22 57 54.3	8.074
2	16 6 49.54	2.0713	23 5 55.7	7.972
3	16 8 53.93	2.0751	23 13 51.0	7.869
4	16 10 58.55	2.0788	23 21 40.0	7.765
5	16 13 3.39	2.0826	23 29 22.8	7.661
6	16 15 8.46	2.0863	23 36 59.3	7.555
7	16 17 13.75	2.0900	23 44 29.4	7.448
8	16 19 19.26	2.0938	23 51 53.1	7.342
9	16 21 25.00	2.0975	23 59 10.4	7.234
10	16 23 30.96	2.1012	24 6 21.2	7.126
11	16 25 37.14	2.1048	24 13 25.5	7.017
12	16 27 43.53	2.1084	24 20 23.2	6.907
13	16 29 50.15	2.1121	24 27 14.3	6.796
14	16 31 56.98	2.1156	24 33 58.7	6.684
15	16 34 4.02	2.1192	24 40 36.4	6.573
16	16 36 11.28	2.1228	24 47 7.4	6.460
17	16 38 18.75	2.1262	24 53 31.6	6.347
18	16 40 26.42	2.1296	24 59 49.0	6.233
19	16 42 34.30	2.1331	25 5 59.5	6.118
20	16 44 42.39	2.1365	25 12 3.1	6.003
21	16 46 50.68	2.1398	25 17 59.8	5.886
22	16 48 59.17	2.1432	25 23 49.4	5.768
23	16 51 7.86	2.1464	25 29 32.0	5.652
24	16 53 16.74	2.1497	S. 25 35 7.6	5.534

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 11.			
	h m s	s	° ′ ″	″
0	16 53 16.74	2.1497	S. 25 35 7.6	5.534
1	16 55 25.82	2.1530	25 40 36.1	5.415
2	16 57 35.10	2.1561	25 45 57.4	5.296
3	16 59 44.55	2.1590	25 51 11.6	5.177
4	17 1 54.18	2.1621	25 56 18.6	5.056
5	17 4 4.00	2.1652	26 1 18.3	4.934
6	17 6 14.00	2.1681	26 6 10.7	4.813
7	17 8 24.17	2.1709	26 10 55.8	4.690
8	17 10 34.51	2.1738	26 15 33.5	4.568
9	17 12 45.02	2.1766	26 20 3.9	4.444
10	17 14 55.70	2.1793	26 24 26.8	4.320
11	17 17 6.54	2.1821	26 28 42.3	4.196
12	17 19 17.55	2.1848	26 32 50.3	4.071
13	17 21 28.71	2.1873	26 36 50.8	3.946
14	17 23 40.02	2.1898	26 40 43.8	3.820
15	17 25 51.48	2.1923	26 44 29.2	3.693
16	17 28 3.09	2.1946	26 48 7.0	3.567
17	17 30 14.83	2.1968	26 51 37.2	3.439
18	17 32 26.71	2.1991	26 54 59.7	3.311
19	17 34 38.72	2.2013	26 58 14.5	3.183
20	17 36 50.87	2.2035	27 1 21.6	3.054
21	17 39 3.14	2.2055	27 4 21.0	2.926
22	17 41 15.53	2.2075	27 7 12.7	2.797
23	17 43 28.04	2.2094	S. 27 9 56.6	2.667
	MONDAY 12.			
0	17 45 40.66	2.2113	S. 27 12 32.7	2.537
1	17 47 53.39	2.2130	27 15 1.0	2.406
2	17 50 6.22	2.2147	27 17 21.4	2.275
3	17 52 19.15	2.2163	27 19 34.0	2.144
4	17 54 32.18	2.2180	27 21 38.7	2.013
5	17 56 45.31	2.2195	27 23 35.6	1.882
6	17 58 58.52	2.2208	27 25 24.5	1.749
7	18 1 11.81	2.2221	27 27 5.5	1.617
8	18 3 25.17	2.2233	27 28 38.5	1.484
9	18 5 38.60	2.2244	27 30 3.6	1.352
10	18 7 52.10	2.2256	27 31 20.7	1.219
11	18 10 5.67	2.2266	27 32 29.9	1.086
12	18 12 19.29	2.2275	27 33 31.0	0.952
13	18 14 32.97	2.2284	27 34 24.1	0.819
14	18 16 46.70	2.2292	27 35 9.3	0.686
15	18 19 0.47	2.2298	27 35 46.4	0.552
16	18 21 14.28	2.2305	27 36 15.5	0.418
17	18 23 28.13	2.2311	27 36 36.5	0.283
18	18 25 42.01	2.2315	27 36 49.5	0.150
19	18 27 55.91	2.2318	27 36 54.5	−0.016
20	18 30 9.83	2.2321	27 36 51.4	+0.119
21	18 32 23.76	2.2323	27 36 40.2	0.253
22	18 34 37.71	2.2325	27 36 21.0	0.387
23	18 36 51.66	2.2325	27 35 53.8	0.521
24	18 39 5.61	2.2325	S. 27 35 18.5	0.656

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 13.			
	h m s	s	° ′ ″	″
0	18 39 5.61	2.2325	S. 27 35 18.5	0.656
1	18 41 19.56	2.2324	27 34 35.1	0.790
2	18 43 33.50	2.2322	27 33 43.7	0.924
3	18 45 47.42	2.2319	27 32 44.2	1.059
4	18 48 1.33	2.2317	27 31 36.6	1.193
5	18 50 15.21	2.2313	27 30 21.0	1.327
6	18 52 29.07	2.2307	27 28 57.4	1.461
7	18 54 42.89	2.2301	27 27 25.7	1.595
8	18 56 56.68	2.2294	27 25 46.0	1.728
9	18 59 10.42	2.2287	27 23 58.3	1.863
10	19 1 24.12	2.2278	27 22 2.5	1.996
11	19 3 37.76	2.2269	27 19 58.8	2.128
12	19 5 51.35	2.2260	27 17 47.1	2.262
13	19 8 4.88	2.2250	27 15 27.4	2.394
14	19 10 18.35	2.2239	27 12 59.8	2.527
15	19 12 31.75	2.2227	27 10 24.2	2.659
16	19 14 45.07	2.2214	27 7 40.7	2.792
17	19 16 58.32	2.2202	27 4 49.2	2.924
18	19 19 11.49	2.2188	27 1 49.8	3.056
19	19 21 24.58	2.2173	26 58 42.5	3.187
20	19 23 37.57	2.2158	26 55 27.4	3.318
21	19 25 50.47	2.2142	26 52 4.4	3.448
22	19 28 3.27	2.2125	26 48 33.6	3.578
23	19 30 15.97	2.2108	S. 26 44 55.0	3.709
	WEDNESDAY 14.			
0	19 32 28.56	2.2090	S. 26 41 8.5	3.839
1	19 34 41.05	2.2072	26 37 14.3	3.968
2	19 36 53.42	2.2052	26 33 12.3	4.098
3	19 39 5.67	2.2032	26 29 2.6	4.226
4	19 41 17.80	2.2012	26 24 45.2	4.354
5	19 43 29.81	2.1991	26 20 20.1	4.482
6	19 45 41.69	2.1969	26 15 47.4	4.609
7	19 47 53.44	2.1948	26 11 7.0	4.736
8	19 50 5.06	2.1925	26 6 19.1	4.863
9	19 52 16.54	2.1902	26 1 23.5	4.989
10	19 54 27.88	2.1878	25 56 20.4	5.114
11	19 56 39.07	2.1853	25 51 9.8	5.239
12	19 58 50.12	2.1829	25 45 51.7	5.363
13	20 1 1.02	2.1804	25 40 26.2	5.488
14	20 3 11.77	2.1778	25 34 53.2	5.612
15	20 5 22.36	2.1753	25 29 12.8	5.735
16	20 7 32.80	2.1727	25 23 25.0	5.858
17	20 9 43.08	2.1699	25 17 29.9	5.979
18	20 11 53.19	2.1672	25 11 27.5	6.100
19	20 14 3.14	2.1644	25 5 17.9	6.221
20	20 16 12.92	2.1617	24 59 1.0	6.341
21	20 18 22.54	2.1588	24 52 37.0	6.461
22	20 20 31.98	2.1559	24 46 5.7	6.581
23	20 22 41.25	2.1531	24 39 27.3	6.698
24	20 24 50.35	2.1502	S. 24 32 41.9	6.816

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 15.			
	h m s	s	° ′ ″	″
0	20 24 50.35	2.1502	S. 24 32 41.9	6.816
1	20 26 59.27	2.1472	24 25 49.4	6.933
2	20 29 8.01	2.1443	24 18 49.9	7.050
3	20 31 16.58	2.1413	24 11 43.4	7.167
4	20 33 24.97	2.1383	24 4 29.9	7.283
5	20 35 33.17	2.1352	23 57 9.5	7.397
6	20 37 41.19	2.1321	23 49 42.3	7.511
7	20 39 49.02	2.1290	23 42 8.2	7.625
8	20 41 56.67	2.1259	23 34 27.3	7.738
9	20 44 4.13	2.1228	23 26 39.6	7.851
10	20 46 11.41	2.1197	23 18 45.2	7.962
11	20 48 18.49	2.1165	23 10 44.2	8.072
12	20 50 25.39	2.1134	23 2 36.6	8.182
13	20 52 32.10	2.1102	22 54 22.4	8.292
14	20 54 38.61	2.1069	22 46 1.6	8.401
15	20 56 44.93	2.1038	22 37 34.3	8.508
16	20 58 51.07	2.1007	22 29 0.6	8.616
17	21 0 57.02	2.0975	22 20 20.4	8.723
18	21 3 2.77	2.0943	22 11 33.8	8.829
19	21 5 8.33	2.0911	22 2 40.9	8.934
20	21 7 13.70	2.0878	21 53 41.7	9.039
21	21 9 18.87	2.0847	21 44 36.2	9.143
22	21 11 23.86	2.0815	21 35 24.5	9.247
23	21 13 28.65	2.0783	S. 21 26 6.6	9.348
	FRIDAY 16.			
0	21 15 33.26	2.0752	S. 21 16 42.7	9.449
1	21 17 37.68	2.0720	21 7 12.7	9.551
2	21 19 41.90	2.0688	20 57 36.6	9.652
3	21 21 45.94	2.0658	20 47 54.5	9.751
4	21 23 49.79	2.0627	20 38 6.5	9.850
5	21 25 53.46	2.0596	20 28 12.5	9.948
6	21 27 56.94	2.0564	20 18 12.7	10.045
7	21 30 0.23	2.0533	20 8 7.1	10.142
8	21 32 3.34	2.0503	19 57 55.7	10.238
9	21 34 6.27	2.0473	19 47 38.6	10.333
10	21 36 9.01	2.0442	19 37 15.8	10.427
11	21 38 11.57	2.0413	19 26 47.4	10.520
12	21 40 13.96	2.0383	19 16 13.4	10.613
13	21 42 16.17	2.0353	19 5 33.9	10.705
14	21 44 18.20	2.0324	18 54 48.8	10.797
15	21 46 20.06	2.0296	18 43 58.3	10.887
16	21 48 21.75	2.0267	18 33 2.4	10.977
17	21 50 23.26	2.0238	18 22 1.1	11.067
18	21 52 24.61	2.0211	18 10 54.4	11.155
19	21 54 25.79	2.0183	17 59 42.5	11.242
20	21 56 26.81	2.0156	17 48 25.4	11.328
21	21 58 27.66	2.0128	17 37 3.1	11.414
22	22 0 28.35	2.0103	17 25 35.7	11.499
23	22 2 28.89	2.0077	17 14 3.2	11.584
24	22 4 29.27	2.0051	S. 17 2 25.6	11.668

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 17.			
	h m s	s	° ′ ″	″
0	22 4 29.27	2.0031	S. 17 2 25.6	11.668
1	22 6 29.50	2.0025	16 50 43.1	11.750
2	22 8 29.57	2.0000	16 38 55.6	11.832
3	22 10 29.50	1.9976	16 27 3.2	11.913
4	22 12 29.28	1.9952	16 15 6.0	11.994
5	22 14 28.92	1.9928	16 3 3.9	12.074
6	22 16 28.42	1.9905	15 50 57.1	12.153
7	22 18 27.78	1.9882	15 38 45.5	12.232
8	22 20 27.00	1.9859	15 26 29.3	12.309
9	22 22 26.09	1.9838	15 14 8.4	12.386
10	22 24 25.05	1.9817	15 1 43.0	12.462
11	22 26 23.89	1.9796	14 49 13.0	12.538
12	22 28 22.60	1.9775	14 36 38.5	12.612
13	22 30 21.19	1.9756	14 23 59.6	12.685
14	22 32 19.67	1.9737	14 11 16.3	12.758
15	22 34 18.03	1.9718	13 58 28.7	12.829
16	22 36 16.28	1.9700	13 45 36.8	12.901
17	22 38 14.43	1.9683	13 32 40.6	12.972
18	22 40 12.47	1.9665	13 19 40.2	13.042
19	22 42 10.41	1.9649	13 6 35.6	13.110
20	22 44 8.26	1.9633	12 53 27.0	13.178
21	22 46 6.01	1.9618	12 40 14.3	13.246
22	22 48 3.67	1.9603	12 26 57.5	13.313
23	22 50 1.25	1.9589	S. 12 13 36.8	13.378
	SUNDAY 18.			
0	22 51 58.74	1.9576	S. 12 0 12.2	13.443
1	22 53 56.16	1.9563	11 46 43.7	13.507
2	22 55 53.50	1.9551	11 33 11.4	13.569
3	22 57 50.77	1.9539	11 19 35.4	13.632
4	22 59 47.97	1.9528	11 5 55.6	13.694
5	23 1 45.11	1.9518	10 52 12.1	13.755
6	23 3 42.19	1.9509	10 38 25.0	13.815
7	23 5 39.22	1.9500	10 24 34.3	13.874
8	23 7 36.19	1.9492	10 10 40.1	13.933
9	23 9 33.12	1.9484	9 56 42.4	13.990
10	23 11 30.00	1.9478	9 42 41.3	14.047
11	23 13 26.85	1.9472	9 28 36.8	14.103
12	23 15 23.66	1.9466	9 14 29.0	14.158
13	23 17 20.44	1.9462	9 0 17.9	14.212
14	23 19 17.20	1.9458	8 46 3.6	14.265
15	23 21 13.94	1.9455	8 31 46.1	14.318
16	23 23 10.66	1.9452	8 17 25.4	14.371
17	23 25 7.36	1.9450	8 3 1.6	14.422
18	23 27 4.06	1.9450	7 48 34.8	14.471
19	23 29 0.76	1.9449	7 34 5.1	14.520
20	23 30 57.45	1.9449	7 19 32.4	14.569
21	23 32 54.15	1.9451	7 4 56.8	14.617
22	23 34 50.86	1.9453	6 50 18.4	14.663
23	23 36 47.59	1.9457	6 35 37.3	14.708
24	23 38 44.34	1.9460	S. 6 20 53.4	14.753

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 19.			
	h m s	s	° ′ ″	″
0	23 38 44.34	1.9460	S. 6 20 53.4	14.753
1	23 40 41.11	1.9464	6 6 6.9	14.798
2	23 42 37.91	1.9470	5 51 17.7	14.841
3	23 44 34.75	1.9476	5 36 26.0	14.883
4	23 46 31.62	1.9483	5 21 31.8	14.924
5	23 48 28.54	1.9490	5 6 35.1	14.965
6	23 50 25.50	1.9498	4 51 36.0	15.004
7	23 52 22.52	1.9508	4 36 34.6	15.043
8	23 54 19.60	1.9518	4 21 30.9	15.080
9	23 56 16.74	1.9529	4 6 25.0	15.117
10	23 58 13.95	1.9542	3 51 16.9	15.153
11	0 0 11.24	1.9554	3 36 6.7	15.188
12	0 2 8.60	1.9568	3 20 54.4	15.222
13	0 4 6.05	1.9583	3 5 40.1	15.254
14	0 6 3.59	1.9598	2 50 23.9	15.286
15	0 8 1.22	1.9613	2 35 5.8	15.318
16	0 9 58.95	1.9630	2 19 45.8	15.348
17	0 11 56.78	1.9648	2 4 24.1	15.376
18	0 13 54.73	1.9668	1 49 0.7	15.404
19	0 15 52.79	1.9687	1 33 35.6	15.431
20	0 17 50.97	1.9708	1 18 9.0	15.457
21	0 19 49.28	1.9729	1 2 40.8	15.482
22	0 21 47.72	1.9752	0 47 11.1	15.506
23	0 23 46.30	1.9775	S. 0 31 40.1	15.528
	TUESDAY 20.			
0	0 25 45.02	1.9799	S. 0 16 7.7	15.550
1	0 27 43.89	1.9824	S. 0 0 34.1	15.571
2	0 29 42.91	1.9850	N. 0 15 0.8	15.591
3	0 31 42.09	1.9877	0 30 36.8	15.608
4	0 33 41.43	1.9904	0 46 13.8	15.625
5	0 35 40.94	1.9933	1 1 51.8	15.642
6	0 37 40.63	1.9963	1 17 30.8	15.657
7	0 39 40.50	1.9993	1 33 10.7	15.671
8	0 41 40.55	2.0025	1 48 51.3	15.683
9	0 43 40.80	2.0058	2 4 32.7	15.696
10	0 45 41.25	2.0092	2 20 14.8	15.706
11	0 47 41.90	2.0126	2 35 57.4	15.715
12	0 49 42.76	2.0162	2 51 40.6	15.723
13	0 51 43.84	2.0198	3 7 24.2	15.729
14	0 53 45.13	2.0234	3 23 8.1	15.735
15	0 55 46.65	2.0273	3 38 52.4	15.740
16	0 57 48.41	2.0313	3 54 36.9	15.743
17	0 59 50.40	2.0352	4 10 21.5	15.744
18	1 1 52.63	2.0393	4 26 6.2	15.745
19	1 3 55.12	2.0436	4 41 50.9	15.744
20	1 5 57.86	2.0478	4 57 35.5	15.742
21	1 8 0.86	2.0522	5 13 19.9	15.738
22	1 10 4.13	2.0568	5 29 4.1	15.734
23	1 12 7.67	2.0613	5 44 48.0	15.728
24	1 14 11.49	2.0660	N. 6 0 31.4	15.719

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 21.			
	h m s	s	° ′ ″	″
0	1 14 11.49	2.0660	N. 6 0 31.4	15.719
1	1 16 15.59	2.0708	6 16 14.3	15.710
2	1 18 19.98	2.0757	6 31 56.6	15.700
3	1 20 24.67	2.0807	6 47 38.3	15.688
4	1 22 29.66	2.0858	7 3 19.2	15.675
5	1 24 34.96	2.0909	7 18 59.3	15.661
6	1 26 40.57	2.0962	7 34 38.5	15.644
7	1 28 46.50	2.1015	7 50 16.6	15.626
8	1 30 52.75	2.1070	8 5 53.6	15.607
9	1 32 59.34	2.1126	8 21 29.4	15.586
10	1 35 6.26	2.1182	8 37 3.9	15.563
11	1 37 13.52	2.1239	8 52 37.0	15.539
12	1 39 21.13	2.1298	9 8 8.6	15.513
13	1 41 29.09	2.1357	9 23 38.6	15.486
14	1 43 37.41	2.1418	9 39 6.9	15.458
15	1 45 46.10	2.1478	9 54 33.5	15.428
16	1 47 55.15	2.1540	10 9 58.2	15.395
17	1 50 4.58	2.1603	10 25 20.9	15.361
18	1 52 14.39	2.1668	10 40 41.5	15.326
19	1 54 24.59	2.1732	10 56 0.0	15.289
20	1 56 35.18	2.1798	11 11 16.2	15.250
21	1 58 46.16	2.1864	11 26 30.0	15.209
22	2 0 57.55	2.1932	11 41 41.3	15.167
23	2 3 9.34	2.2000	N.11 56 50.0	15.123
	THURSDAY 22.			
0	2 5 21.55	2.2069	N.12 11 56.0	15.076
1	2 7 34.17	2.2139	12 26 59.1	15.028
2	2 9 47.22	2.2211	12 41 59.3	14.978
3	2 12 0.70	2.2283	12 56 56.5	14.927
4	2 14 14.61	2.2355	13 11 50.5	14.873
5	2 16 28.96	2.2429	13 26 41.2	14.818
6	2 18 43.76	2.2503	13 41 28.6	14.761
7	2 20 59.00	2.2578	13 56 12.5	14.701
8	2 23 14.69	2.2653	14 10 52.7	14.639
9	2 25 30.84	2.2730	14 25 29.2	14.576
10	2 27 47.45	2.2808	14 40 1.8	14.511
11	2 30 4.53	2.2886	14 54 30.5	14.444
12	2 32 22.08	2.2964	15 8 55.1	14.375
13	2 34 40.10	2.3043	15 23 15.5	14.303
14	2 36 58.60	2.3124	15 37 31.5	14.230
15	2 39 17.59	2.3205	15 51 43.1	14.154
16	2 41 37.06	2.3286	16 5 50.0	14.076
17	2 43 57.02	2.3368	16 19 52.2	13.997
18	2 46 17.48	2.3451	16 33 49.6	13.915
19	2 48 38.43	2.3534	16 47 42.0	13.831
20	2 50 59.89	2.3618	17 1 29.3	13.744
21	2 53 21.85	2.3702	17 15 11.3	13.656
22	2 55 44.31	2.3786	17 28 48.0	13.566
23	2 58 7.28	2.3872	17 42 19.2	13.473
24	3 0 30.77	2.3958	N.17 55 44.7	13.378

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 23.			
	h m s	s	° ′ ″	″
0	3 0 30.77	2.3958	N.17 55 44.7	13.378
1	3 2 54.77	2.4043	18 9 4.5	13.281
2	3 5 19.29	2.4130	18 22 18.4	13.182
3	3 7 44.33	2.4217	18 35 26.3	13.080
4	3 10 9.89	2.4303	18 48 28.0	12.976
5	3 12 35.97	2.4391	19 1 23.4	12.869
6	3 15 2.58	2.4479	19 14 12.3	12.761
7	3 17 29.72	2.4567	19 26 54.7	12.651
8	3 19 57.38	2.4654	19 39 30.4	12.538
9	3 22 25.57	2.4743	19 51 59.2	12.422
10	3 24 54.30	2.4832	20 4 21.0	12.304
11	3 27 23.55	2.4919	20 16 35.7	12.184
12	3 29 53.33	2.5008	20 28 43.1	12.062
13	3 32 23.64	2.5096	20 40 43.2	11.938
14	3 34 54.48	2.5185	20 52 35.7	11.811
15	3 37 25.86	2.5274	21 4 20.5	11.682
16	3 39 57.77	2.5362	21 15 57.5	11.550
17	3 42 30.20	2.5449	21 27 26.5	11.416
18	3 45 3.16	2.5538	21 38 47.4	11.280
19	3 47 36.65	2.5625	21 50 0.1	11.142
20	3 50 10.66	2.5712	22 1 4.4	11.001
21	3 52 45.19	2.5799	22 12 0.2	10.858
22	3 55 20.25	2.5886	22 22 47.4	10.713
23	3 57 55.82	2.5972	N.22 33 25.7	10.565
	SATURDAY 24.			
0	4 0 31.91	2.6058	N.22 43 55.2	10.416
1	4 3 8.51	2.6143	22 54 15.6	10.263
2	4 5 45.62	2.6228	23 4 26.8	10.108
3	4 8 23.24	2.6312	23 14 28.6	9.952
4	4 11 1.36	2.6395	23 24 21.0	9.793
5	4 13 39.98	2.6477	23 34 3.8	9.632
6	4 16 19.08	2.6558	23 43 36.8	9.468
7	4 18 58.68	2.6640	23 53 0.0	9.303
8	4 21 38.76	2.6719	24 2 13.2	9.136
9	4 24 19.31	2.6798	24 11 16.3	8.966
10	4 27 0.33	2.6876	24 20 9.1	8.794
11	4 29 41.82	2.6953	24 28 51.6	8.621
12	4 32 23.77	2.7029	24 37 23.6	8.445
13	4 35 6.17	2.7104	24 45 45.0	8.267
14	4 37 49.02	2.7178	24 53 55.6	8.086
15	4 40 32.31	2.7250	25 1 55.3	7.904
16	4 43 16.02	2.7320	25 9 44.1	7.721
17	4 46 0.15	2.7390	25 17 21.8	7.535
18	4 48 44.70	2.7459	25 24 48.3	7.348
19	4 51 29.66	2.7526	25 32 3.5	7.158
20	4 54 15.01	2.7590	25 39 7.2	6.967
21	4 57 0.74	2.7653	25 45 59.5	6.774
22	4 59 46.85	2.7716	25 52 40.1	6.579
23	5 2 33.33	2.7776	25 59 9.0	6.383
24	5 5 20.16	2.7834	N.26 5 26.1	6.185

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 25.			
	h m s	s	° ′ ″	″
0	5 5 20.16	2.7834	N.26 5 26.1	6.185
1	5 8 7.34.	2.7892	26 11 31.3	5.986
2	5 10 54.86	2.7947	26 17 24.4	5.784
3	5 13 42.70	2.7999	26 23 5.4	5.582
4	5 16 30.85	2.8051	26 28 34.2	5.378
5	5 19 19.31	2.8100	26 33 50.7	5.173
6	5 22 8.05	2.8147	26 38 54.9	4.966
7	5 24 57.07	2.8192	26 43 46.6	4.758
8	5 27 46.35	2.8235	26 48 25.8	4.549
9	5 30 35.89	2.8277	26 52 52.5	4.339
10	5 33 25.67	2.8315	26 57 6.5	4.128
11	5 36 15.67	2.8352	27 ℞ 7.8	3.916
12	5 39 5.89	2.8387	27 4 56.4	3.703
13	5 41 56.31	2.8418	27 8 32.1	3.488
14	5 44 46.91	2.8448	27 11 54.9	3.272
15	5 47 37.69	2.8477	27 15 4.7	3.056
16	5 50 28.63	2.8502	27 18 1.6	2.840
17	5 53 19.71	2.8523	27 20 45.5	2.623
18	5 56 10.91	2.8544	27 23 16.3	2.404
19	5 59 2.24	2.8563	27 25 34.0	2.186
20	6 1 53.67	2.8578	27 27 38.6	1.967
21	6 4 45.18	2.8592	27 29 30.0	1.747
22	6 7 36.77	2.8603	27 31 8.2	1.528
23	6 10 28.41	2.8611	N.27 32 33.3	1.308
	MONDAY 26.			
0	6 13 20.10	2.8618	N.27 33 45.1	1.087
1	6 16 11.82	2.8621	27 34 43.7	0.866
2	6 19 3.55	2.8621	27 35 29.0	0.645
3	6 21 55.27	2.8619	27 36 1.1	0.425
4	6 24 46.98	2.8615	27 36 20.0	+0.205
5	6 27 38.65	2.8608	27 36 25.7	−0.015
6	6 30 30.28	2.8599	27 36 18.2	0.236
7	6 33 21.84	2.8588	27 35 57.4	0.457
8	6 36 13.33	2.8574	27 35 23.4	0.676
9	6 39 4.73	2.8558	27 34 36.3	0.895
10	6 41 56.02	2.8538	27 33 36.0	1.114
11	6 44 47.19	2.8518	27 32 22.6	1.332
12	6 47 38.23	2.8494	27 30 56.2	1.549
13	6 50 29.12	2.8468	27 29 16.7	1.767
14	6 53 19.84	2.8438	27 27 24.1	1.984
15	6 56 10.38	2.8407	27 25 18.6	2.199
16	6 59 0.73	2.8374	27 23 0.2	2.413
17	7 1 50.87	2.8339	27 20 29.0	2.628
18	7 4 40.80	2.8302	27 17 44.9	2.841
19	7 7 30.49	2.8261	27 14 48.1	3.053
20	7 10 19.93	2.8218	27 11 38.6	3.264
21	7 13 9.11	2.8174	27 8 16.4	3.474
22	7 15 58.02	2.8128	27 4 41.7	3.682
23	7 18 46.65	2.8080	27 0 54.6	3.889
24	7 21 34.98	2.8029	N.26 56 55.0	4.096

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 27.			
	h m s	s	° ′ ″	″
0	7 21 34.98	2.8029	N.26 56 55.0	4.096
1	7 24 23.00	2.7976	26 52 43.1	4.301
2	7 27 10.69	2.7921	26 48 18.9	4.504
3	7 29 58.05	2.7864	26 43 42.6	4.706
4	7 32 45.06	2.7806	26 38 54.2	4.907
5	7 35 31.72	2.7746	26 33 53.8	5.106
6	7 38 18.01	2.7683	26 28 41.5	5.303
7	7 41 3.92	2.7620	26 23 17.4	5.498
8	7 43 49.45	2.7554	26 17 41.7	5.693
9	7 46 34.58	2.7487	26 11 54.3	5.886
10	7 49 19.30	2.7419	26 5 55.4	6.076
11	7 52 3.61	2.7349	25 59 45.2	6.265
12	7 54 47.49	2.7277	25 53 23.6	6.453
13	7 57 30.93	2.7203	25 46 50.9	6.638
14	8 0 13.93	2.7128	25 40 7.1	6.821
15	8 2 56.47	2.7052	25 33 12.4	7.003
16	8 5 38.55	2.6975	25 26 6.8	7.183
17	8 8 20.17	2.6897	25 18 50.5	7.360
18	8 11 1.31	2.6817	25 11 23.6	7.535
19	8 13 41.97	2.6736	25 3 46.3	7.708
20	8 16 22.14	2.6653	24 55 58.6	7.880
21	8 19 1.81	2.6571	24 48 0.7	8.050
22	8 21 40.99	2.6488	24 39 52.6	8.218
23	8 24 19.66	2.6403	N.24 31 34.6	8.383
	WEDNESDAY 28.			
0	8 26 57.82	2.6317	N.24 23 6.7	8.546
1	8 29 35.46	2.6229	24 14 29.1	8.707
2	8 32 12.57	2.6142	24 5 41.9	8.866
3	8 34 49.16	2.6054	23 56 45.2	9.023
4	8 37 25.22	2.5966	23 47 39.2	9.177
5	8 40 0.75	2.5877	23 38 24.0	9.329
6	8 42 35.74	2.5787	23 28 59.7	9.479
7	8 45 10.19	2.5696	23 19 26.5	9.627
8	8 47 44.09	2.5605	23 9 44.5	9.773
9	8 50 17.45	2.5514	22 59 53.8	9.916
10	8 52 50.26	2.5423	22 49 54.6	10.057
11	8 55 22.52	2.5330	22 39 47.0	10.196
12	8 57 54.22	2.5238	22 29 31.1	10.333
13	9 0 25.37	2.5146	22 19 7.1	10.467
14	9 2 55.97	2.5053	22 8 35.1	10.599
15	9 5 26.01	2.4960	21 57 55.2	10.730
16	9 7 55.49	2.4867	21 47 7.5	10.858
17	9 10 24.41	2.4774	21 36 12.3	10.983
18	9 12 52.78	2.4682	21 25 9.6	11.106
19	9 15 20.59	2.4588	21 13 59.6	11.227
20	9 17 47.84	2.4495	21 2 42.4	11.345
21	9 20 14.53	2.4403	20 51 18.2	11.462
22	9 22 40.67	2.4310	20 39 47.0	11.577
23	9 25 6.25	2.4217	20 28 9.0	11.689
24	9 27 31.27	2.4124	N.20 16 24.3	11.799

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 29.			
	h m s	s	° ′ ″	″
0	9 27 31.27	2.4124	N.20 16 24.3	11.799
1	9 29 55.74	2.4033	20 4 33.1	11.907
2	9 32 19.66	2.3942	19 52 35.5	12.012
3	9 34 43.04	2.3850	19 40 31.6	12.116
4	9 37 5.86	2.3758	19 28 21.6	12.217
5	9 39 28.14	2.3668	19 16 5.6	12.316
6	9 41 49.88	2.3578	19 3 43.7	12.413
7	9 44 11.07	2.3487	18 51 16.0	12.508
8	9 46 31.72	2.3398	18 38 42.7	12.602
9	9 48 51.84	2.3308	18 26 3.8	12.693
10	9 51 11.42	2.3219	18 13 19.6	12.781
11	9 53 30.47	2.3132	18 0 30.1	12.868
12	9 55 49.00	2.3044	17 47 35.4	12.953
13	9 58 7.00	2.2957	17 34 35.7	13.035
14	10 0 24.48	2.2871	17 21 31.2	13.115
15	10 2 41.45	2.2785	17 8 21.9	13.194
16	10 4 57.90	2.2700	16 55 7.9	13.272
17	10 7 13.85	2.2616	16 41 49.3	13.347
18	10 9 29.29	2.2532	16 28 26.3	13.419
19	10 11 44.23	2.2448	16 14 59.0	13.489
20	10 13 58.67	2.2366	16 1 27.6	13.558
21	10 16 12.62	2.2284	15 47 52.0	13.627
22	10 18 26.08	2.2203	15 34 12.4	13.692
23	10 20 39.05	2.2123	N.15 20 29.0	13.755
	FRIDAY 30.			
0	10 22 51.55	2.2043	N.15 6 41.8	13.817
1	10 25 3.57	2.1965	14 52 51.0	13.876
2	10 27 15.13	2.1888	14 38 56.7	13.934
3	10 29 26.22	2.1810	14 24 58.9	13.991
4	10 31 36.85	2.1733	14 10 57.8	14.045
5	10 33 47.02	2.1658	13 56 53.5	14.097
6	10 35 56.74	2.1583	13 42 46.1	14.148
7	10 38 6.02	2.1510	13 28 35.7	14.198
8	10 40 14.86	2.1437	13 14 22.3	14.247
9	10 42 23.26	2.1364	13 0 6.1	14.293
10	10 44 31.23	2.1293	12 45 47.2	14.337
11	10 46 38.78	2.1223	12 31 25.7	14.379
12	10 48 45.91	2.1154	12 17 1.7	14.421
13	10 50 52.63	2.1086	12 2 35.2	14.461
14	10 52 58.94	2.1018	11 48 6.4	14.498
15	10 55 4.84	2.0951	11 33 35.4	14.535
16	10 57 10.35	2.0886	11 19 2.2	14.570
17	10 59 15.47	2.0821	11 4 27.0	14.603
18	11 1 20.20	2.0757	10 49 49.8	14.636
19	11 3 24.55	2.0694	10 35 10.7	14.667
20	11 5 28.53	2.0633	10 20 29.8	14.696
21	11 7 32.14	2.0571	10 5 47.2	14.723
22	11 9 35.38	2.0511	9 51 3.0	14.750
23	11 11 38.27	2.0452	9 36 17.2	14.775
24	11 13 40.80	2.0393	N. 9 21 30.0	14.798

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY, JULY 1.			
	h m s	s	° ′ ″	″
0	11 13 40.80	2.0393	N. 9 21 30.0	14.798

PHASES OF THE MOON.

			d	h	m
☽	First Quarter	June	3	10	4.2
○	Full Moon		11	9	50.7
☾	Last Quarter		19	8	50.8
●	New Moon		26	1	19.7

			d	h
☾	Apogee	June	11	10.7
☾	Perigee		25	15.1

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	59 14 37	2594	60 53 40	2612	62 32 19	2630	64 10 33	2649
	Venus	W.	17 13 37	2686	18 50 36	2699	20 27 17	2713	22 3 40	2726
	Pollux	W.	16 57 17	2306	18 43 8	2320	20 28 39	2334	22 13 49	2349
	Spica	E.	73 54 37	2295	72 8 30	2311	70 22 47	2328	68 37 29	2346
	Jupiter	E.	87 1 53	2260	85 14 54	2277	83 28 20	2293	81 42 10	2310
	Antares	E.	119 47 50	2289	118 1 34	2306	116 15 43	2323	114 30 17	2339
2	Sun	W.	72 15 33	2741	73 51 19	2759	75 26 41	2777	77 1 39	2795
	Pollux	W.	30 54 5	2429	32 36 58	2446	34 19 27	2462	36 1 34	2479
	Venus	W.	30 0 43	2806	31 35 3	2823	33 9 1	2841	34 42 36	2858
	Spica	E.	59 57 18	2433	58 14 31	2451	56 32 9	2469	54 50 12	2486
	Jupiter	E.	72 57 34	2396	71 13 53	2413	69 30 37	2430	67 47 45	2448
	Antares	E.	105 49 14	2425	104 6 15	2442	102 23 40	2459	100 41 29	2476
3	Sun	W.	84 50 33	2886	86 23 10	2903	87 55 25	2920	89 27 18	2938
	Pollux	W.	44 26 18	2561	46 6 7	2577	47 45 33	2593	49 24 38	2605
	Venus	W.	42 24 57	2945	43 56 19	2962	45 27 19	2979	46 57 58	2996
	Spica	E.	46 26 33	2574	44 47 2	2591	43 7 55	2608	41 29 11	2626
	Jupiter	E.	59 19 27	2531	57 38 57	2548	55 58 50	2564	54 19 5	2579
	Antares	E.	92 16 31	2560	90 36 41	2576	88 57 13	2592	87 18 8	2608
4	Sun	W.	97 1 21	3021	98 31 8	3037	100 0 35	3052	101 29 44	3067
	Pollux	W.	57 34 46	2684	59 11 47	2699	60 48 28	2713	62 24 51	2727
	Venus	W.	54 26 3	3078	55 54 40	3093	57 22 58	3108	58 50 58	3123
	Spica	E.	33 21 19	2710	31 44 53	2729	30 8 51	2746	28 33 12	2763
	Jupiter	E.	46 5 41	2656	44 28 2	2671	42 50 43	2685	41 13 43	2699
	Antares	E.	79 7 59	2685	77 30 59	2699	75 54 18	2713	74 17 56	2727
	α Aquilæ	E.	122 15 31	3946	121 2 58	3919	119 49 58	3895	118 36 33	3872
5	Sun	W.	108 50 55	3139	110 18 18	3152	111 45 24	3165	113 12 15	3178
	Pollux	W.	70 22 15	2792	71 56 53	2804	73 31 16	2816	75 5 23	2828
	Venus	W.	66 6 33	3193	67 32 50	3207	68 58 51	3220	70 24 37	3232
	Jupiter	E.	33 13 17	2765	31 38 3	2778	30 3 6	2790	28 28 25	2802
	Antares	E.	66 20 36	2793	64 45 59	2806	63 11 39	2818	61 37 34	2829
	α Aquilæ	E.	112 24 37	3797	111 9 32	3789	109 54 18	3781	108 38 56	3774
6	Sun	W.	120 22 48	3237	121 48 13	3248	123 13 25	3259	124 38 25	3269
	Pollux	W.	82 52 20	2881	84 25 3	2891	85 57 33	2900	87 29 52	2909
	Venus	W.	77 29 54	3290	78 54 17	3300	80 18 29	3310	81 42 29	3320
	Jupiter	E.	20 38 45	2858	19 5 32	2868	17 32 32	2879	15 59 46	2890
	Antares	E.	53 50 47	2883	52 18 7	2894	50 45 40	2905	49 13 25	2912
	α Aquilæ	E.	102 20 51	3762	101 5 9	3761	99 49 26	3762	98 33 45	3762
7	Pollux	W.	95 8 38	2951	96 39 52	2958	98 10 57	2965	99 41 53	2972
	Venus	W.	88 39 42	3365	90 2 38	3373	91 25 25	3380	92 48 4	3388
	Antares	E.	41 35 1	2956	40 3 53	2963	38 32 54	2970	37 2 4	2978
	α Aquilæ	E.	92 16 9	3787	91 0 53	3793	89 45 44	3800	88 30 42	3808
8	Pollux	W.	107 14 32	3003	108 44 41	3008	110 14 44	3013	111 44 40	3018
	Venus	W.	99 39 16	3421	101 1 9	3427	102 22 55	3432	103 44 35	3437
	Spica	W.	16 52 18	3093	18 20 36	3086	19 49 3	3081	21 17 37	3077
	Antares	E.	29 30 11	3012	28 0 13	3019	26 30 24	302 5	25 0 43	3032

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.	Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun W.	65 48 22	2667	67 25 46	2685	69 2 46	2703	70 39 22	2722
	Venus W.	23 39 45	2741	25 15 31	2756	26 50 56	2772	28 26 0	2789
	Pollux W.	23 58 38	2364	25 43 4	2380	27 27 8	2396	29 10 48	2412
	Spica E.	66 52 37	2364	65 8 10	2381	63 24 8	2398	61 40 30	2416
	Jupiter E.	79 56 25	2327	78 11 5	2344	76 26 10	2361	74 41 40	2378
	Antares E.	112 45 15	2357	111 0 38	2374	109 16 26	2391	107 32 38	2408
2	Sun W.	78 36 13	2814	80 10 23	2832	81 44 9	2850	83 17 32	2868
	Pollux W.	37 43 17	2495	39 24 37	2512	41 5 33	2528	42 46 7	2545
	Venus W.	36 15 49	2876	37 48 39	2893	39 21 7	2910	40 53 13	2927
	Spica E.	53 8 39	2504	51 27 31	2522	49 46 48	2538	48 6 28	2556
	Jupiter E.	66 5 18	2465	64 23 15	2482	62 41 36	2498	61 0 20	2515
	Antares E.	98 59 42	2493	97 18 19	2510	95 37 20	2527	93 56 44	2543
3	Sun W.	90 58 49	2955	92 29 58	2972	94 0 46	2988	95 31 14	3005
	Pollux W.	51 3 21	2624	52 41 43	2640	54 19 44	2655	55 57 25	2669
	Venus W.	48 28 16	3013	49 58 13	3029	51 27 50	3046	52 57 6	3062
	Spica E.	39 50 51	2642	38 12 53	2660	36 35 19	2677	34 58 8	2693
	Jupiter E.	52 39 41	2595	51 0 39	2611	49 21 59	2626	47 43 40	2641
	Antares E.	85 39 24	2624	84 1 2	2639	82 23 0	2655	80 45 19	2670
4	Sun W.	102 58 34	3082	104 27 5	3096	105 55 19	3110	107 23 16	3125
	Pollux W.	64 0 55	2740	65 36 41	2753	67 12 10	2767	68 47 21	2780
	Venus W.	60 18 40	3138	61 46 4	3152	63 13 11	3166	64 40 0	3180
	Spica E.	26 57 56	2782	25 23 4	2801	23 48 38	2821	22 14 37	2840
	Jupiter E.	39 37 2	2713	38 0 40	2726	36 24 35	2739	34 48 48	2752
	Antares E.	72 41 52	2741	71 6 7	2755	69 30 40	2768	67 55 30	2780
	α Aquilæ E.	117 22 45	3854	116 8 38	3836	114 54 13	3820	113 39 32	3807
5	Sun W.	114 38 51	3191	116 5 11	3203	117 31 17	3214	118 57 9	3225
	Pollux W.	76 39 15	2839	78 12 52	2850	79 46 15	2861	81 19 24	2871
	Venus W.	71 50 9	3244	73 15 26	3256	74 40 29	3268	76 5 18	3279
	Jupiter E.	26 53 59	2814	25 19 49	2825	23 45 53	2836	22 12 12	2847
	Antares E.	60 3 43	2841	58 30 8	2852	56 56 47	2862	55 23 40	2873
	α Aquilæ E.	107 23 27	3769	106 7 53	3766	104 52 15	3763	103 36 34	3761
6	Sun W.	126 3 13	3279	127 27 49	3289	128 52 13	3298	130 16 26	3306
	Pollux W.	89 1 59	2918	90 33 55	2927	92 5 40	2935	93 37 14	2943
	Venus W.	83 6 17	3330	84 29 54	3339	85 53 20	3348	87 16 36	3357
	Jupiter E.	14 27 14	2901	12 54 57	2912	11 22 54	2924	9 51 6	2935
	Antares E.	47 41 22	2921	46 9 30	2930	44 37 50	2939	43 6 20	2947
	α Aquilæ E.	97 18 6	3768	96 2 30	3771	94 46 58	3776	93 31 31	3781
7	Pollux W.	101 12 41	2979	102 43 20	2985	104 13 52	2991	105 44 16	2997
	Venus W.	94 10 34	3395	95 32 56	3402	96 55 10	3408	98 17 17	3415
	Antares E.	35 31 24	2985	34 0 53	2992	32 30 30	2999	31 0 16	3006
	α Aquilæ E.	87 15 48	3817	86 1 4	3827	84 46 29	3837	83 32 5	3848
8	Pollux W.	113 14 31	3022	114 44 16	3027	116 13 55	3031	117 43 29	3034
	Venus W.	105 6 10	3442	106 27 39	3447	107 49 2	3451	109 10 20	3455
	Spica W.	22 46 15	3074	24 14 57	3072	25 43 41	3071	27 12 26	3071
	Antares E.	23 31 10	3039	22 1 45	3046	20 32 30	3053	19 3 23	3059

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
8	α Aquilæ	E.	82 17 52	3859	81 3 51	3871	79 50 2	3884	78 36 26	3899
	Fomalhaut	E.	111 37 29	3207	110 11 28	3208	108 45 28	3209	107 19 30	3211
9	VENUS	W.	110 31 34	3459	111 52 43	3463	113 13 48	3467	114 34 49	3471
	Spica	W.	28 41 11	3072	30 9 56	3073	31 38 39	3072	33 7 23	3073
	JUPITER	W.	15 58 30	3018	17 28 20	3021	18 58 7	3023	20 27 51	3026
	α Aquilæ	E.	72 32 21	3983	71 20 25	4004	70 8 49	4025	68 57 34	4048
	Fomalhaut	E.	100 10 11	3220	98 44 26	3222	97 18 43	3224	95 53 3	3226
	α Pegasi	E.	119 25 22	3525	118 5 25	3515	116 45 18	3506	115 25 1	3497
10	VENUS	W.	121 19 1	3484	122 39 43	3486	124 0 22	3488	125 20 59	3490
	Spica	W.	40 30 45	3078	41 59 22	3078	43 27 58	3078	44 56 34	3079
	JUPITER	W.	27 55 44	3037	29 25 11	3039	30 54 35	3040	32 23 58	3042
	α Aquilæ	E.	63 7 27	4187	61 58 49	4221	60 50 43	4257	59 43 11	4296
	Fomalhaut	E.	88 45 21	3238	87 19 56	3240	85 54 35	3242	84 29 16	3244
	α Pegasi	E.	108 41 30	3466	107 20 28	3462	105 59 21	3457	104 38 9	3453
11	Spica	W.	52 19 22	3081	53 47 55	3082	55 16 27	3081	56 45 0	3081
	JUPITER	W.	39 50 28	3047	41 19 43	3047	42 48 57	3047	44 18 11	3047
	α Aquilæ	E.	54 15 14	4535	53 11 53	4594	52 9 23	4659	51 7 49	4728
	Fomalhaut	E.	77 23 25	3259	75 58 25	3262	74 33 28	3265	73 8 35	3268
	α Pegasi	E.	97 51 11	3439	96 29 39	3438	95 8 5	3436	93 46 29	3435
12	Spica	W.	64 7 52	3077	65 36 29	3076	67 5 8	3074	68 33 49	3073
	JUPITER	W.	51 44 20	3046	53 13 36	3045	54 42 52	3044	56 12 10	3043
	Antares	W.	18 14 51	3093	19 43 9	3089	21 11 32	3085	22 40 0	3082
	Fomalhaut	E.	66 5 11	3287	64 40 44	3291	63 16 22	3296	61 52 6	3301
	α Pegasi	E.	86 58 18	3433	85 36 39	3434	84 15 1	3435	82 53 23	3436
13	Spica	W.	75 57 43	3063	77 26 38	3061	78 55 35	3058	80 24 36	3055
	JUPITER	W.	63 39 4	3035	65 8 34	3033	66 38 6	3030	68 7 41	3027
	Antares	W.	30 3 22	3065	31 32 14	3062	33 1 10	3059	34 30 10	3055
	Fomalhaut	E.	54 52 28	3335	53 28 57	3344	52 5 36	3353	50 42 26	3363
	α Pegasi	E.	76 5 41	3446	74 44 16	3449	73 22 54	3453	72 1 37	3457
	SATURN	E.	126 0 56	3103	124 32 50	3100	123 4 40	3097	121 36 27	3094
14	Spica	W.	87 50 39	3038	89 20 5	3034	90 49 36	3030	92 19 12	3025
	JUPITER	W.	75 36 35	3010	77 6 35	3007	78 36 39	3003	80 6 48	2998
	Antares	W.	41 56 19	3035	43 25 48	3031	44 55 22	3026	46 25 2	3022
	Fomalhaut	E.	43 50 0	3435	42 28 23	3455	41 7 9	3478	39 46 20	3503
	α Pegasi	E.	65 16 29	3485	63 55 47	3492	62 35 14	3501	61 14 50	3510
	SATURN	E.	114 14 20	3076	112 45 41	3071	111 16 56	3067	109 48 6	3062
15	Spica	W.	99 48 45	2998	101 19 0	2992	102 49 22	2986	104 19 52	2980
	JUPITER	W.	87 39 5	2972	89 9 53	2966	90 40 47	2960	92 11 50	2953
	Antares	W.	53 54 57	2994	55 25 17	2988	56 55 45	2981	58 26 21	2974
	α Pegasi	E.	54 35 52	3575	53 16 50	3592	51 58 6	3610	50 39 43	3631
	SATURN	E.	102 22 22	3036	100 52 52	3029	99 23 15	3022	97 53 30	3016
16	Spica	W.	111 54 32	2943	113 25 56	2935	114 57 31	2926	116 29 17	2918
	JUPITER	W.	99 49 13	2917	101 21 10	2909	102 53 18	2900	104 25 37	2891
	Antares	W.	66 1 35	2936	67 33 8	2928	69 4 51	2919	70 36 45	2910

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month	Name and Direction of Object		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
8	α Aquilæ	E.	77 23 5	3914	76 9 59	3929	74 57 9	3946	73 44 36	3964
	Fomalhaut	E.	105 53 34	3213	104 27 40	3214	103 1 48	3216	101 35 58	3218
9	VENUS	W.	115 55 46	3474	117 16 39	3477	118 37 29	3480	119 58 16	3482
	Spica	W.	34 36 6	3074	36 4 48	3075	37 33 28	3076	39 2 7	3077
	JUPITER	W.	21 57 31	3029	23 27 8	3031	24 56 43	3033	26 26 15	3035
	α Aquilæ	E.	67 46 42	4073	66 36 14	4099	65 26 11	4127	64 16 35	4156
	Fomalhaut	E.	94 27 25	3229	93 1 50	3231	91 36 18	3233	90 10 48	3235
	α Pegasi	E.	114 4 34	3490	112 43 59	3484	111 23 17	3477	110 2 27	3471
10	VENUS	W.	126 41 34	3492	128 2 7	3493	129 22 39	3495	130 43 9	3496
	Spica	W.	46 25 9	3080	47 53 43	3081	49 22 16	3081	50 50 49	3081
	JUPITER	W.	33 53 19	3043	35 22 38	3044	36 51 56	3045	38 21 12	3046
	α Aquilæ	E.	58 36 15	4338	57 29 57	4381	56 24 19	4429	55 19 24	4480
	Fomalhaut	E.	83 3 59	3247	81 38 46	3250	80 13 36	3253	78 48 29	3256
	α Pegasi	E.	103 16 52	3450	101 55 32	3447	100 34 8	3444	99 12 41	3441
11	Spica	W.	58 13 33	3080	59 42 7	3080	61 10 41	3079	62 39 16	3078
	JUPITER	W.	45 47 25	3048	47 16 38	3048	48 45 51	3047	50 15 5	3047
	α Aquilæ	E.	50 7 13	4803	49 7 39	4885	48 9 12	4972	47 11 55	5067
	Fomalhaut	E.	71 43 46	3271	70 19 1	3275	68 54 20	3278	67 29 43	3282
	α Pegasi	E.	92 24 52	3434	91 3 14	3434	89 41 36	3433	88 19 57	3433
12	Spica	W.	70 2 31	3071	71 31 15	3069	73 0 2	3067	74 28 51	3065
	JUPITER	W.	57 41 29	3042	59 10 50	3041	60 40 12	3039	62 9 37	3037
	Antares	W.	24 8 32	3078	25 37 8	3074	27 5 49	3071	28 34 34	3068
	Fomalhaut	E.	60 27 56	3306	59 3 52	3313	57 39 56	3320	56 16 8	3327
	α Pegasi	E.	81 31 47	3437	80 10 13	3438	78 48 40	3440	77 27 9	3443
13	Spica	W.	81 53 40	3052	83 22 48	3048	84 52 1	3045	86 21 18	3042
	JUPITER	W.	69 37 20	3024	71 7 2	3021	72 36 49	3018	74 6 40	3014
	Antares	W.	35 59 15	3052	37 28 24	3048	38 57 37	3044	40 26 55	3039
	Fomalhaut	E.	49 19 27	3375	47 56 41	3388	46 34 11	3402	45 11 57	3417
	α Pegasi	E.	70 40 24	3461	69 19 16	3466	67 58 14	3471	66 37 18	3478
	SATURN	E.	120 8 10	3091	118 39 49	3087	117 11 24	3083	115 42 54	3080
14	Spica	W.	93 48 54	3020	95 18 42	3015	96 48 36	3009	98 18 37	3004
	JUPITER	W.	81 37 3	2993	83 7 24	2988	84 37 51	2983	86 8 25	2978
	Antares	W.	47 54 48	3017	49 24 40	3011	50 54 39	3006	52 24 44	3000
	Fomalhaut	E.	38 25 58	3532	37 6 8	3564	35 46 54	3600	34 28 20	3641
	α Pegasi	E.	59 54 37	3520	58 34 35	3532	57 14 46	3545	55 55 11	3559
	SATURN	E.	108 19 10	3057	106 50 8	3052	105 21 0	3046	103 51 45	3040
15	Spica	W.	105 50 30	2973	107 21 17	2966	108 52 12	2958	110 23 17	2950
	JUPITER	W.	93 43 1	2946	95 14 21	2940	96 45 49	2933	98 17 26	2925
	Antares	W.	59 57 6	2968	61 27 59	2961	62 59 1	2953	64 30 13	2945
	α Pegasi	E.	49 21 42	3654	48 4 6	3681	46 46 59	3712	45 30 25	3748
	SATURN	E.	96 23 37	3009	94 53 35	3001	93 23 24	2993	91 53 3	2985
16	Spica	W.	118 1 13	2909	119 33 21	2900	121 5 40	2890	122 38 12	2880
	JUPITER	W.	105 58 7	2882	107 30 49	2873	109 3 42	2863	110 36 48	2853
	Antares	W.	72 8 51	2901	73 41 8	2891	75 13 38	2882	76 46 20	2872

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
16	SATURN	E.	90 22 32	2977	88 51 51	2969	87 20 59	2960	85 49 56	2951
	SUN	E.	129 12 17	3300	127 48 6	3291	126 23 44	3281	124 59 10	3270
17	JUPITER	W.	112 10 6	2843	113 43 38	2838	115 17 24	2821	116 51 24	2810
	Antares	W.	78 19 15	2861	79 52 24	2850	81 25 47	2838	82 59 25	2827
	SATURN	E.	78 11 45	2901	76 39 28	2890	75 6 57	2879	73 34 11	2868
	SUN	E.	117 53 16	3216	116 27 26	3204	115 1 22	3192	113 35 3	3179
18	Antares	W.	90 51 24	2766	92 26 37	2752	94 2 7	2738	95 37 56	2724
	α Aquilæ	W.	50 30 27	4391	51 35 56	4306	52 42 43	4227	53 50 44	4152
	SATURN	E.	65 46 35	2806	64 12 15	2793	62 37 38	2779	61 2 43	2765
	SUN	E.	106 19 35	3112	104 51 40	3097	103 23 27	3083	101 54 57	3068
19	Antares	W.	103 41 43	2651	105 19 28	2636	106 57 34	2621	108 36 1	2605
	α Aquilæ	W.	59 47 30	3839	61 1 52	3787	62 17 8	3736	63 33 17	3688
	SATURN	E.	53 3 28	2693	51 26 39	2678	49 49 29	2662	48 11 58	2647
	SUN	E.	94 27 40	2989	92 57 13	2972	91 26 25	2955	89 55 16	2938
20	α Aquilæ	W.	70 6 2	3482	71 26 46	3446	72 48 11	3411	74 10 15	3379
	Fomalhaut	W.	37 7 28	3036	38 36 56	2983	40 7 30	2934	41 39 6	2887
	SATURN	E.	39 59 7	2567	38 19 27	2551	36 39 25	2535	34 59 1	2520
	SUN	E.	82 14 4	2851	80 40 42	2832	79 6 56	2814	77 32 46	2796
21	α Aquilæ	W.	81 9 21	3237	82 34 46	3213	84 0 39	3191	85 26 59	3170
	Fomalhaut	W.	49 30 44	2697	51 7 28	2665	52 44 55	2634	54 23 4	2604
	α Pegasi	W.	34 0 5	3790	35 15 18	3654	36 32 54	3534	37 52 41	3426
	SATURN	E.	26 31 34	2444	24 49 2	2431	23 6 11	2418	21 23 2	2407
	SUN	E.	69 36 1	2705	67 59 28	2687	66 22 30	2669	64 45 8	2650
22	α Aquilæ	W.	92 44 29	3084	94 12 58	3073	95 41 41	3062	97 10 37	3053
	Fomalhaut	W.	62 43 21	2475	64 25 9	2452	66 7 30	2430	67 50 22	2409
	α Pegasi	W.	44 58 45	3022	46 28 30	2961	47 59 32	2905	49 31 45	2852
	SUN	E.	56 32 15	2564	54 52 30	2547	53 12 22	2531	51 31 52	2515
23	α Aquilæ	W.	104 37 16	3038	106 6 42	3042	107 36 3	3048	109 5 17	3057
	Fomalhaut	W.	76 31 50	2317	78 17 25	2301	80 3 23	2286	81 49 44	2272
	α Pegasi	W.	57 28 8	2645	59 6 2	2612	60 44 41	2581	62 24 2	2553
	SUN	E.	43 4 0	2443	41 21 26	2431	39 38 35	2419	37 55 28	2408
28	SUN	W.	27 55 29	2453	29 37 48	2462	31 19 54	2474	33 1 44	2487
	Spica	E.	79 40 41	2119	77 50 11	2134	76 0 3	2148	74 10 17	2163
	JUPITER	E.	91 25 26	2108	89 34 39	2122	87 44 14	2137	85 54 11	2152
29	SUN	W.	41 26 11	2560	43 6 1	2577	44 45 28	2594	46 24 31	2612
	Spica	E.	65 7 17	2244	63 19 55	2262	61 32 59	2279	59 46 29	2297
	JUPITER	E.	76 49 44	2232	75 2 4	2249	73 14 50	2267	71 28 2	2284
	Antares	E.	111 0 7	2237	109 12 35	2254	107 25 28	2272	105 38 47	2289
30	SUN	W.	54 33 38	2705	56 10 11	2724	57 46 19	2744	59 22 1	2763
	Spica	E.	51 0 35	2390	49 16 46	2410	47 33 25	2429	45 50 31	2448
	JUPITER	E.	62 40 33	2376	60 56 24	2394	59 12 41	2413	57 29 25	2431
	Antares	E.	96 51 51	2380	95 7 47	2398	93 24 10	2417	91 40 59	2435

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
16	SATURN	E.	84 18 42	2942	82 47 16	2933	81 15 39	2923	79 43 49	2912
	SUN	E.	123 34 24	3260	122 9 26	3250	120 44 16	3239	119 18 53	3227
17	JUPITER	W.	118 25 39	2798	120 0 9	2786	121 34 54	2774	123 9 56	2762
	Antares	W.	84 33 18	2815	86 7 26	2804	87 41 49	2792	89 16 28	2779
	SATURN	E.	72 1 11	2856	70 27 56	2844	68 54 25	2831	67 20 38	2819
	SUN	E.	112 8 29	3166	110 41 40	3153	109 14 35	3139	107 47 13	3126
18	Antares	W.	97 14 3	2710	98 50 29	2696	100 27 14	2681	102 4 18	2666
	α Aquilæ	W.	54 59 56	4082	56 10 15	4017	57 21 38	3953	58 34 4	3894
	SATURN	E.	59 27 30	2751	57 51 58	2737	56 16 8	2722	54 39 58	2707
	SUN	E.	100 26 8	3052	98 57 0	3037	97 27 33	3022	95 57 47	3005
19	Antares	W.	110 14 49	2589	111 53 59	2572	113 33 32	2556	115 13 27	2540
	α Aquilæ	W.	64 50 17	3643	66 8 5	3600	67 26 39	3558	68 45 59	3519
	SATURN	E.	46 34 7	2631	44 55 54	2615	43 17 20	2599	41 38 24	2583
	SUN	E.	88 23 46	2921	86 51 54	2904	85 19 40	2886	83 47 3	2869
20	α Aquilæ	W.	75 32 56	3348	76 56 12	3318	78 20 3	3290	79 44 26	3263
	Fomalhaut	W.	43 11 41	2845	44 45 11	2805	46 19 33	2766	47 54 45	2731
	SATURN	E.	33 18 15	2504	31 37 8	2488	29 55 38	2473	28 13 46	2458
	SUN	E.	75 58 13	2778	74 23 16	2760	72 47 55	2741	71 12 10	2723
21	α Aquilæ	W.	86 53 44	3150	88 20 53	3131	89 48 25	3114	91 16 18	3099
	Fomalhaut	W.	56 1 54	2576	57 41 22	2550	59 21 26	2524	61 2 6	2499
	α Pegasi	W.	39 14 28	3330	40 38 5	3242	42 3 25	3161	43 30 21	3088
	SATURN	E.	19 39 37	2398	17 55 59	2392	16 12 13	2391	14 28 25	2393
	SUN	E.	63 7 21	2633	61 29 11	2615	59 50 36	2597	58 11 37	2580
22	α Aquilæ	W.	98 39 44	3046	100 9 0	3041	101 38 23	3038	103 7 49	3037
	Fomalhaut	W.	69 33 44	2389	71 17 35	2370	73 1 54	2351	74 46 39	2333
	α Pegasi	W.	51 5 5	2804	52 39 27	2760	54 14 47	2719	55 51 2	2681
	SUN	E.	49 50 59	2500	48 9 45	2485	46 28 10	2470	44 46 15	2456
23	α Aquilæ	W.	110 34 19	3069	112 3 6	3085	113 31 34	3104	114 59 39	3125
	Fomalhaut	W.	83 36 25	2259	85 23 25	2247	87 10 44	2235	88 58 20	2224
	α Pegasi	W.	64 4 1	2527	65 44 37	2502	67 25 49	2479	69 7 32	2459
	SUN	E.	36 12 5	2398	34 28 28	2389	32 44 38	2382	31 0 37	2375
28	SUN	W.	34 43 16	2500	36 24 30	2514	38 5 24	2528	39 45 58	2543
	Spica	W.	72 20 54	2178	70 31 54	2194	68 43 17	2210	66 55 5	2227
	JUPITER	E.	84 4 30	2167	82 15 13	2182	80 26 19	2198	78 37 49	2215
29	SUN	W.	48 3 10	2630	49 41 24	2648	51 19 14	2667	52 56 39	2686
	Spica	E.	58 0 24	2315	56 14 46	2334	54 29 35	2353	52 44 52	2371
	JUPITER	E.	69 41 39	2302	67 55 43	2320	66 10 13	2339	64 25 10	2357
	Antares	E.	103 52 32	2307	102 6 43	2324	100 21 19	2343	98 36 22	2361
30	SUN	W.	60 57 18	2782	62 32 9	2802	64 6 34	2822	65 40 34	2842
	Spica	E.	44 8 4	2467	42 26 5	2487	40 44 34	2507	39 3 30	2527
	JUPITER	E.	55 46 35	2450	54 4 12	2469	52 22 15	2488	50 40 45	2507
	Antares	E.	89 58 14	2454	88 15 56	2472	86 34 4	2491	84 52 38	2510

AT GREENWICH APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Semi-diameter	Sidereal Time of Semi-diameter Passing Meridian	Equation of Time, to be Added to Apparent Time.	Diff. for 1 Hour.
		h m s	s	° ′ ″	″	′ ″	s	m s	s
Sat.	1	6 37 7.07	+ 10.353	N.23 10 42.7	− 9.19	15 45.69	68.78	3 25.31	0.495
SUN.	2	6 41 15.41	10.342	23 6 50.1	10.20	15 45.68	68.75	3 37.06	0.484
Mon.	3	6 45 23.47	10.330	23 2 33.2	11.20	15 45.68	68.71	3 48.53	0.472
Tues.	4	6 49 31.22	+ 10.317	22 57 52.3	− 12.20	15 45.68	68.67	3 59.70	0.459
Wed.	5	6 53 38.66	10.303	22 52 47.4	13.20	15 45.69	68.63	4 10.55	0.445
Thur.	6	6 57 45.77	10.289	22 47 18.6	14.20	15 45.70	68.58	4 21.07	0.431
Frid.	7	7 1 52.52	+ 10.274	22 41 26.1	− 15.19	15 45.72	68.53	4 31.23	0.416
Sat.	8	7 5 58.89	10.258	22 35 9.9	16.17	15 45.74	68.48	4 41.02	0.400
SUN.	9	7 10 4.88	10.241	22 28 30.3	17.14	15 45.76	68.43	4 50.42	0.384
Mon.	10	7 14 10.47	+ 10.224	22 21 27.5	− 18.10	15 45.78	68.37	4 59.42	0.367
Tues.	11	7 18 15.64	10.207	22 14 1.6	19.06	15 45.80	68.31	5 8.01	0.349
Wed.	12	7 22 20.38	10.189	22 6 12.7	20.01	15 45.83	68.25	5 16.18	0.331
Thur.	13	7 26 24.69	+ 10.170	21 58 1.1	− 20.95	15 45.86	68.19	5 23.91	0.313
Frid.	14	7 30 28.54	10.151	21 49 26.9	21.89	15 45.90	68.12	5 31.18	0.294
Sat.	15	7 34 31.92	10.131	21 40 30.4	22.82	15 45.95	68.05	5 37.98	0.274
SUN.	16	7 38 34.82	+ 10.111	21 31 11.7	− 23.74	15 46.00	67.98	5 44.31	0.254
Mon.	17	7 42 37.24	10.090	21 21 31.0	24.65	15 46.04	67.91	5 50.16	0.233
Tues.	18	7 46 39.16	10.069	21 11 28.5	25.55	15 46.09	67.84	5 55.51	0.212
Wed.	19	7 50 40.58	+ 10.048	21 1 4.4	− 26.45	15 46.15	67.76	6 0.35	0.191
Thur.	20	7 54 41.48	10.027	20 50 18.9	27.34	15 46.21	67.68	6 4.68	0.170
Frid.	21	7 58 41.86	10.005	20 39 12.2	28.22	15 46.28	67.61	6 8.49	0.148
Sat.	22	8 2 41.69	+ 9.982	20 27 44.5	− 29.08	15 46.35	67.53	6 11.76	0.125
SUN.	23	8 6 40.97	9.959	20 15 56.2	29.93	15 46.43	67.45	6 14.48	0.102
Mon.	24	8 10 39.69	9.935	20 3 47.5	30.78	15 46.51	67.36	6 16.64	0.078
Tues.	25	8 14 37.84	+ 9.911	19 51 18.7	− 31.62	15 46.60	67.28	6 18.22	0.054
Wed.	26	8 18 35.40	9.886	19 38 30.0	32.44	15 46.70	67.20	6 19.22	0.030
Thur.	27	8 22 32.37	9.861	19 25 21.6	33.25	15 46.80	67.12	6 19.63	0.005
Frid.	28	8 26 28.73	+ 9.836	19 11 53.9	− 34.05	15 46.90	67.03	6 19.43	0.021
Sat.	29	8 30 24.47	9.810	18 58 7.2	34.84	15 47.01	66.94	6 18.62	0.047
SUN.	30	8 34 19.59	9.784	18 44 1.7	35.61	15 47.12	66.85	6 17.19	0.073
Mon.	31	8 38 14.08	9.758	18 29 37.8	36.37	15 47.24	66.77	6 15.13	0.099
Tues.	32	8 42 7.95	+ 9.732	N.18 14 55.8	− 37.12	15 47.37	66.68	6 12.45	0.125

NOTE.—The mean time of semidiameter passing the meridian may be found by subtracting 0s.19 from the sidereal time. The sign − prefixed to the hourly change of declination indicates that north declinations are decreasing.

AT GREENWICH MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Equation of Time, to be Subtracted from Mean Time.	Diff. for 1 Hour.	Sidereal Time, or Right Ascension of Mean Sun.
		h m s	s	° ′ ″	″	m s	s	h m s
Sat.	1	6 37 6.48	+ 10.351	N.23 10 43.2	− 9.18	3 25.29	−0.495	6 33 41.20
SUN.	2	6 41 14.78	10.340	23 6 50.7	10.19	3 37.03	0.484	6 37 37.76
Mon.	3	6 45 22.81	10.328	23 2 34.0	11.20	3 48.50	0.472	6 41 34.31
Tues.	4	6 49 30.54	+ 10.315	22 57 53.1	− 12.20	3 59.67	−0.459	6 45 30.87
Wed.	5	6 53 37.95	10.302	22 52 48.3	13.20	4 10.52	0.445	6 49 27.43
Thur.	6	6 57 45.02	10.288	22 47 19.6	14.19	4 21.04	0.431	6 53 23.99
Frid.	7	7 1 51.74	+ 10.273	22 41 27.2	− 15.18	4 31.20	−0.416	6 57 20.55
Sat.	8	7 5 58.09	10.257	22 35 11.2	16.16	4 40.99	0.400	7 1 17.10
SUN.	9	7 10 4.05	10.240	22 28 31.7	17.13	4 50.39	0.384	7 5 13.66
Mon.	10	7 14 9.62	+ 10.223	22 21 29.0	− 18.10	4 59.40	−0.367	7 9 10.22
Tues.	11	7 18 14.77	10.206	22 14 3.2	19.05	5 7.99	0.349	7 13 6.78
Wed.	12	7 22 19.49	10.188	22 6 14.5	20.00	5 16.15	0.331	7 17 3.34
Thur.	13	7 26 23.77	+ 10.169	21 58 3.0	− 20.95	5 23.88	−0.313	7 20 59.90
Frid.	14	7 30 27.60	10.150	21 49 29.0	21.88	5 31.15	0.294	7 24 56.45
Sat.	15	7 34 30.97	10.130	21 40 32.6	22.81	5 37.96	0.274	7 28 53.01
SUN.	16	7 38 33.86	+ 10.110	21 31 14.0	− 23.73	5 44.29	−0.254	7 32 49.57
Mon.	17	7 42 36.26	10.090	21 21 33.4	24.65	5 50.13	0.233	7 36 46.13
Tues.	18	7 46 38.17	10.069	21 11 31.0	25.55	5 55.48	0.212	7 40 42.68
Wed.	19	7 50 39.57	+ 10.048	21 1 7.0	− 26.45	6 0.33	−0.191	7 44 39.24
Thur.	20	7 54 40.46	10.026	20 50 21.6	27.33	6 4.66	0.170	7 48 35.80
Frid.	21	7 58 40.83	10.004	20 39 15.0	28.21	6 8.47	0.148	7 52 32.36
Sat.	22	8 2 40.66	+ 9.981	20 27 47.5	− 29.08	6 11.74	−0.125	7 56 28.92
SUN.	23	8 6 39.94	9.958	20 15 59.4	29.93	6 14.46	0.102	8 0 25.47
Mon.	24	8 10 38.66	9.935	20 3 50.8	30.78	6 16.62	0.078	8 4 22.03
Tues.	25	8 14 36.80	+ 9.911	19 51 22.0	− 31.61	6 18.21	−0.054	8 8 18.59
Wed.	26	8 18 34.36	9.886	19 38 33.4	32.44	6 19.22	0.030	8 12 15.14
Thur.	27	8 22 31.33	9.861	19 25 25.1	33.25	6 19.63	−0.005	8 16 11.70
Frid.	28	8 26 27.69	+ 9.836	19 11 57.5	− 34.05	6 19.43	+0.021	8 20 8.26
Sat.	29	8 30 23.44	9.810	18 58 10.8	34.84	6 18.62	0.047	8 24 4.81
SUN.	30	8 34 18.56	9.784	18 44 5.4	35.61	6 17.19	0.073	8 28 1.37
Mon.	31	8 38 13.06	9.758	18 29 41.6	36.37	6 15.14	0.099	8 31 57.93
Tues.	32	8 42 6.94	+ 9.732	N.18 14 59.6	− 37.12	6 12.46	+0.125	8 35 54.48

NOTE.—The semidiameter for mean noon may be assumed the same as that for apparent noon. The sign − prefixed to the hourly change of declination indicates that north declinations are decreasing.

Diff. for 1 Hour, +9s.8565. (Table III.)

AT GREENWICH MEAN NOON.

Day of the Month.	Day of the Year.	THE SUN'S TRUE LONGITUDE. λ	THE SUN'S TRUE LONGITUDE. λ'	Diff. for 1 Hour.	THE SUN'S LATITUDE.	Logarithm of the Radius Vector of the Earth.	Diff. for 1 Hour.	Mean Time of Sidereal Noon.
		° ′ ″	′ ″	″	″			h m s
1	182	98 31 40.6	31 25.5	143.03	+ 0.55	0.007 2067	+ 1.6	17 23 27.39
2	183	99 28 53.2	28 37.9	143.02	0.47	0.007 2094	+ 0.7	17 19 31.48
3	184	100 26 5.5	25 50.0	143.00	0.38	0.007 2100	− 0.2	17 15 35.57
4	185	101 23 17.4	23 1.7	142.99	+ 0.26	0.007 2085	− 1.0	17 11 39.65
5	186	102 20 29.0	20 13.2	142.98	0.14	0.007 2051	1.8	17 7 43.74
6	187	103 17 40.5	17 24.4	142.97	+ 0.02	0.007 2000	2.5	17 3 47.83
7	188	104 14 51.8	14 35.5	142.97	− 0.10	0.007 1931	− 3.2	16 59 51.92
8	189	105 12 3.0	11 46.6	142.97	0.21	0.007 1845	3.9	16 55 56.00
9	190	106 9 14.2	8 57.6	142.97	0.30	0.007 1743	4.6	16 52 0.09
10	191	107 6 25.4	6 8.6	142.97	− 0.37	0.007 1626	− 5.2	16 48 4.18
11	192	108 3 36.8	3 19.8	142.98	0.42	0.007 1493	5.8	16 44 8.27
12	193	109 0 48.4	0 31.2	142.99	0.44	0.007 1345	6.5	16 40 12.36
13	194	109 58 0.3	57 43.0	143.00	− 0.43	0.007 1182	− 7.1	16 36 16.44
14	195	110 55 12.6	54 55.1	143.02	0.41	0.007 1005	7.7	16 32 20.53
15	196	111 52 25.3	52 7.6	143.04	0.35	0.007 0812	8.4	16 28 24.62
16	197	112 49 38.6	49 20.7	143.07	− 0.26	0.007 0602	− 9.1	16 24 28.71
17	198	113 46 52.5	46 34.5	143.09	0.16	0.007 0375	9.8	16 20 32.79
18	199	114 44 7.1	43 48.9	143.12	− 0.04	0.007 0131	10.6	16 16 36.88
19	200	115 41 22.5	41 4.0	143.15	+ 0.09	0.006 9868	− 11.4	16 12 40.97
20	201	116 38 38.6	38 19.9	143.18	0.23	0.006 9584	12.3	16 8 45.06
21	202	117 35 55.5	35 36.7	143.22	0.36	0.006 9279	13.2	16 4 49.15
22	203	118 33 13.2	32 54.3	143.26	+ 0.46	0.006 8951	− 14.2	16 0 53.24
23	204	119 30 31.8	30 12.7	143.29	0.57	0.006 8599	15.2	15 56 57.32
24	205	120 27 51.1	27 31.8	143.32	0.64	0.006 8221	16.3	15 53 1.41
25	206	121 25 11.1	24 51.7	143.35	+ 0.68	0.006 7817	− 17.4	15 49 5.50
26	207	122 22 31.8	22 12.3	143.38	0.69	0.006 7387	18.4	15 45 9.59
27	208	123 19 53.2	19 33.5	143.40	0.66	0.006 6932	19.5	15 41 13.68
28	209	124 17 15.2	16 55.3	143.43	+ 0.60	0.006 6451	− 20.5	15 37 17.77
29	210	125 14 37.8	14 17.7	143.45	0.52	0.006 5946	21.5	15 33 21.86
30	211	126 12 0.9	11 40.7	143.48	0.43	0.006 5418	22.4	15 29 25.95
31	212	127 9 24.6	9 4.2	143.50	0.31	0.006 4868	23.3	15 25 30.04
32	213	128 6 48.9	6 28.3	143.52	+ 0.19	0.006 4298	− 24.1	15 21 34.13

NOTE.—The longitudes in the column λ are referred to the true equinox of their own date, while those in the column λ' are referred to the mean equinox of the beginning of the Besselian fictitious year.

Diff. for 1 Hour, − 9ˢ.8296. (Table II.)

GREENWICH MEAN TIME.

THE MOON'S

Day of the Month.	SEMIDIAMETER.		HORIZONTAL PARALLAX.				UPPER TRANSIT.		AGE.
	Noon.	Midnight.	Noon.	Diff. for 1 Hour.	Midnight.	Diff. for 1 Hour.	Meridian of Greenwich.	Diff. for 1 Hour.	Noon.
	′ ″	′ ″	′ ″	″	′ ″	″	h m	m	d
1	15 46.1	15 38.5	57 46.3	− 2.35	57 18.4	− 2.28	4 49.0	1.90	4.9
2	15 31.2	15 24.3	56 51.6	2.18	56 26.2	2.05	5 33.3	1.80	5.9
3	15 17.8	15 11.9	56 2.5	1.89	55 40.8	1.72	6 15.7	1.74	6.9
4	15 6.5	15 1.7	55 21.1	− 1.54	55 3.6	− 1.36	6 57.6	1.74	7.9
5	14 57.6	14 54.0	54 48.4	1.18	54 35.3	1.00	7 40.1	1.80	8.9
6	14 51.1	14 48.7	54 24.4	0.82	54 15.7	0.64	8 24.1	1.87	9.9
7	14 46.9	14 45.6	54 9.0	− 0.48	54 4.2	− 0.32	9 10.2	1.97	10.9
8	14 44.7	14 44.4	54 1.2	− 0.17	54 0.0	− 0.03	9 58.7	2.06	11.9
9	14 44.5	14 45.1	54 0.5	+ 0.10	54 2.4	+ 0.22	10 49.2	2.13	12.9
10	14 46.0	14 47.3	54 5.7	+ 0.33	54 10.4	+ 0.44	11 40.6	2.15	13.9
11	14 48.9	14 50.8	54 16.3	0.55	54 23.5	0.65	12 31.9	2.11	14.9
12	14 53.1	14 55.6	54 31.8	0.74	54 41.2	0.83	13 21.7	2.03	15.9
13	14 58.5	15 1.7	54 51.8	+ 0.93	55 3.5	+ 1.02	14 9.6	1.95	16.9
14	15 5.2	15 9.0	55 16.3	1.11	55 30.2	1.20	14 55.4	1.87	17.9
15	15 13.1	15 17.5	55 45.2	1.30	56 1.4	1.40	15 39.6	1.82	18.9
16	15 22.2	15 27.3	56 18.8	+ 1.50	56 37.3	+ 1.59	16 23.1	1.81	19.9
17	15 32.6	15 38.2	56 56.8	1.67	57 17.3	1.74	17 7.1	1.86	20.9
18	15 44.0	15 49.9	57 38.6	1.80	58 0.5	1.84	17 52.8	1.96	21.9
19	15 56.0	16 2.1	58 22.8	+ 1.86	58 45.2	+ 1.85	18 41.7	2.13	22.9
20	16 8.1	16 13.9	59 7.2	1.80	59 28.4	1.72	19 35.2	2.34	23.9
21	16 19.4	16 24.3	59 48.4	1.59	60 6.5	1.41	20 34.1	2.57	24.9
22	16 28.6	16 32.1	60 22.2	+ 1.19	60 35.1	+ 0.93	21 38.0	2.74	25.9
23	16 34.7	16 36.2	60 44.6	+ 0.63	60 50.3	+ 0.30	22 44.5	2.78	26.9
24	16 36.6	16 35.9	60 51.9	− 0.05	60 49.2	− 0.40	23 50.1	2.67	27.9
25	16 34.0	16 31.0	60 42.2	− 0.76	60 31.0	− 1.10	ó	. .	28.9
26	16 26.9	16 21.8	60 15.9	1.40	59 57.3	1.67	0 51.7	2.45	0.7
27	16 15.9	16 9.4	59 35.7	1.90	59 11.7	2.07	1 47.9	2.23	1.7
28	16 2.4	15 55.1	58 46.0	− 2.19	58 19.1	− 2.26	2 38.9	2.03	2.7
29	15 47.6	15 40.1	57 51.7	2.28	57 24.4	2.25	3 25.9	1.89	3.7
30	15 32.8	15 25.8	56 57.6	2.19	56 31.9	2.08	4 10.2	1.81	4.7
31	15 19.2	15 13.1	56 7.7	1.94	55 45.3	1.78	4 53.2	1.79	5.7
32	15 7.5	15 2.6	55 24.9	− 1.61	55 6.7	− 1.42	5 36.2	1.81	6.7

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 1.			
	h m s	s	° ′ ″	″
0	11 13 40.80	2.0393	N. 9 21 30.0	14.798
1	11 15 42.99	2.0336	9 6 41.4	14.821
2	11 17 44.83	2.0279	8 51 51.5	14.842
3	11 19 46.34	2.0224	8 37 0.4	14.861
4	11 21 47.52	2.0170	8 22 8.2	14.879
5	11 23 48.38	2.0117	8 7 14.9	14.896
6	11 25 48.92	2.0063	7 52 20.7	14.912
7	11 27 49.14	2.0012	7 37 25.5	14.927
8	11 29 49.06	1.9962	7 22 29.5	14.939
9	11 31 48.68	1.9912	7 7 32.8	14.951
10	11 33 48.00	1.9863	6 52 35.4	14.962
11	11 35 47.03	1.9815	6 37 37.4	14.972
12	11 37 45.78	1.9768	6 22 38.8	14.981
13	11 39 44.25	1.9723	6 7 39.7	14.988
14	11 41 42.45	1.9678	5 52 40.3	14.993
15	11 43 40.38	1.9633	5 37 40.5	14.998
16	11 45 38.05	1.9591	5 22 40.5	15.002
17	11 47 35.47	1.9548	5 7 40.3	15.005
18	11 49 32.63	1.9507	4 52 39.9	15.007
19	11 51 29.55	1.9467	4 37 39.5	15.007
20	11 53 26.23	1.9428	4 22 39.1	15.007
21	11 55 22.68	1.9389	4 7 38.7	15.005
22	11 57 18.90	1.9352	3 52 38.5	15.003
23	11 59 14.90	1.9315	N. 3 37 38.4	14.999
	SUNDAY 2.			
0	12 1 10.68	1.9279	N. 3 22 38.6	14.994
1	12 3 6.25	1.9245	3 7 39.1	14.988
2	12 5 1.62	1.9212	2 52 40.0	14.982
3	12 6 56.79	1.9178	2 37 41.3	14.974
4	12 8 51.76	1.9147	2 22 43.1	14.965
5	12 10 46.55	1.9116	2 7 45.5	14.956
6	12 12 41.15	1.9085	1 52 48.4	14.946
7	12 14 35.57	1.9056	1 37 52.0	14.933
8	12 16 29.82	1.9028	1 22 56.4	14.921
9	12 18 23.90	1.9000	1 8 1.5	14.908
10	12 20 17.82	1.8974	0 53 7.4	14.894
11	12 22 11.59	1.8949	0 38 14.2	14.878
12	12 24 5.21	1.8924	0 23 22.0	14.862
13	12 25 58.68	1.8900	N. 0 8 30.8	14.845
14	12 27 52.01	1.8878	S. 0 6 19.4	14.828
15	12 29 45.21	1.8856	0 21 8.5	14.808
16	12 31 38.28	1.8834	0 35 56.4	14.789
17	12 33 31.22	1.8813	0 50 43.2	14.769
18	12 35 24.04	1.8794	1 5 28.7	14.748
19	12 37 16.75	1.8776	1 20 12.9	14.726
20	12 39 9.35	1.8758	1 34 55.8	14.703
21	12 41 1.85	1.8742	1 49 37.2	14.678
22	12 42 54.25	1.8725	2 4 17.2	14.654
23	12 44 46.55	1.8709	2 18 55.7	14.628
24	12 46 38.76	1.8695	S. 2 33 32.6	14.602

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 3.			
	h m s	s	° ′ ″	″
0	12 46 38.76	1.8695	S. 2 33 32.6	14.602
1	12 48 30.89	1.8683	2 48 7.9	14.575
2	12 50 22.95	1.8670	3 2 41.6	14.548
3	12 52 14.93	1.8658	3 17 13.6	14.519
4	12 54 6.84	1.8647	3 31 43.9	14.490
5	12 55 58.69	1.8637	3 46 12.4	14.460
6	12 57 50.48	1.8628	4 0 39.1	14.429
7	12 59 42.22	1.8618	4 15 3.9	14.397
8	13 1 33.90	1.8610	4 29 26.7	14.364
9	13 3 25.54	1.8604	4 43 47.6	14.332
10	13 5 17.15	1.8598	4 58 6.5	14.298
11	13 7 8.72	1.8593	5 12 23.3	14.263
12	13 9 0.26	1.8588	5 26 38.0	14.227
13	13 10 51.78	1.8584	5 40 50.5	14.191
14	13 12 43.27	1.8581	5 55 0.9	14.154
15	13 14 34.75	1.8579	6 9 9.0	14.117
16	13 16 26.22	1.8578	6 23 14.9	14.078
17	13 18 17.68	1.8577	6 37 18.4	14.038
18	13 20 9.14	1.8578	6 51 19.5	13.998
19	13 22 0.61	1.8578	7 5 18.2	13.958
20	13 23 52.08	1.8579	7 19 14.5	13.918
21	13 25 43.56	1.8582	7 33 8.3	13.876
22	13 27 35.06	1.8585	7 46 59.6	13.833
23	13 29 26.58	1.8588	S. 8 0 48.2	13.788
	TUESDAY 4.			
0	13 31 18.12	1.8593	S. 8 14 34.2	13.744
1	13 33 9.69	1.8598	8 28 17.5	13.699
2	13 35 1.30	1.8604	8 41 58.1	13.654
3	13 36 52.94	1.8611	8 55 36.0	13.608
4	13 38 44.63	1.8618	9 9 11.1	13.561
5	13 40 36.36	1.8626	9 22 43.3	13.513
6	13 42 28.14	1.8635	9 36 12.6	13.464
7	13 44 19.98	1.8645	9 49 39.0	13.416
8	13 46 11.88	1.8655	10 3 2.5	13.366
9	13 48 3.84	1.8665	10 16 22.9	13.315
10	13 49 55.86	1.8677	10 29 40.3	13.264
11	13 51 47.96	1.8690	10 42 54.6	13.213
12	13 53 40.14	1.8703	10 56 5.8	13.160
13	13 55 32.39	1.8716	11 9 13.8	13.106
14	13 57 24.73	1.8730	11 22 18.5	13.052
15	13 59 17.15	1.8744	11 35 20.0	12.998
16	14 1 9.66	1.8760	11 48 18.2	12.942
17	14 3 2.27	1.8777	12 1 13.0	12.886
18	14 4 54.98	1.8793	12 14 4.5	12.829
19	14 6 47.79	1.8810	12 26 52.5	12.772
20	14 8 40.70	1.8828	12 39 37.1	12.713
21	14 10 33.72	1.8847	12 52 18.1	12.654
22	14 12 26.86	1.8866	13 4 55.6	12.595
23	14 14 20.11	1.8885	13 17 29.5	12.535
24	14 16 13.48	1.8906	S. 13 29 59.8	12.473

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 5.			
	h m s	s	° ′ ″	″
0	14 16 13.48	1.8906	S. 13 29 59.8	12.473
1	14 18 6.98	1.8927	13 42 26.4	12.412
2	14 20 0.60	1.8948	13 54 49.2	12.349
3	14 21 54.35	1.8969	14 7 8.3	12.286
4	14 23 48.23	1.8992	14 19 23.5	12.222
5	14 25 42.25	1.9015	14 31 34.9	12.158
6	14 27 36.41	1.9039	14 43 42.4	12.093
7	14 29 30.72	1.9063	14 55 46.0	12.026
8	14 31 25.17	1.9088	15 7 45.5	11.958
9	14 33 19.77	1.9113	15 19 41.0	11.892
10	14 35 14.53	1.9139	15 31 32.5	11.823
11	14 37 9.44	1.9165	15 43 19.8	11.754
12	14 39 4.51	1.9192	15 55 3.0	11.685
13	14 40 59.74	1.9219	16 6 42.0	11.614
14	14 42 55.14	1.9247	16 18 16.7	11.543
15	14 44 50.70	1.9274	16 29 47.2	11.472
16	14 46 46.43	1.9303	16 41 13.3	11.398
17	14 48 42.34	1.9333	16 52 35.0	11.325
18	14 50 38.42	1.9362	17 3 52.3	11.251
19	14 52 34.68	1.9392	17 15 5.1	11.176
20	14 54 31.12	1.9423	17 26 13.4	11.101
21	14 56 27.75	1.9453	17 37 17.2	11.025
22	14 58 24.56	1.9483	17 48 16.4	10.948
23	15 0 21.55	1.9515	S. 17 59 10.9	10.870
	THURSDAY 6.			
0	15 2 18.74	1.9548	S. 18 10 0.8	10.792
1	15 4 16.12	1.9580	18 20 45.9	10.713
2	15 6 13.70	1.9613	18 31 26.3	10.633
3	15 8 11.47	1.9645	18 42 1.8	10.552
4	15 10 9.44	1.9678	18 52 32.5	10.471
5	15 12 7.61	1.9713	19 2 58.3	10.388
6	15 14 5.99	1.9747	19 13 19.1	10.305
7	15 16 4.57	1.9780	19 23 34.9	10.221
8	15 18 3.35	1.9814	19 33 45.6	10.137
9	15 20 2.34	1.9850	19 43 51.3	10.052
10	15 22 1.55	1.9885	19 53 51.8	9.966
11	15 24 0.96	1.9920	20 3 47.2	9.879
12	15 26 0.59	1.9956	20 13 37.3	9.792
13	15 28 0.43	1.9992	20 23 22.2	9.703
14	15 30 0.49	2.0028	20 33 1.7	9.614
15	15 32 0.77	2.0064	20 42 35.9	9.525
16	15 34 1.26	2.0100	20 52 4.7	9.434
17	15 36 1.97	2.0137	21 1 28.0	9.343
18	15 38 2.90	2.0174	21 10 45.8	9.251
19	15 40 4.06	2.0212	21 19 58.1	9.158
20	15 42 5.44	2.0248	21 29 4.8	9.064
21	15 44 7.04	2.0285	21 38 5.8	8.970
22	15 46 8.86	2.0323	21 47 1.2	8.875
23	15 48 10.91	2.0360	21 55 50.8	8.779
24	15 50 13.18	2.0398	S. 22 4 34.7	8.683

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 7.			
	h m s	s	° ′ ″	″
0	15 50 13.18	2.0398	S. 22 4 34.7	8.683
1	15 52 15.68	2.0435	22 13 12.8	8.586
2	15 54 18.40	2.0473	22 21 45.0	8.488
3	15 56 21.35	2.0511	22 30 11.3	8.388
4	15 58 24.53	2.0548	22 38 31.6	8.288
5	16 0 27.93	2.0586	22 46 45.9	8.188
6	16 2 31.56	2.0623	22 54 54.2	8.088
7	16 4 35.41	2.0661	23 2 56.4	7.986
8	16 6 39.49	2.0699	23 10 52.5	7.883
9	16 8 43.80	2.0737	23 18 42.4	7.779
10	16 10 48.33	2.0774	23 26 26.0	7.675
11	16 12 53.09	2.0812	23 34 3.4	7.571
12	16 14 58.07	2.0849	23 41 34.5	7.465
13	16 17 3.28	2.0887	23 48 59.2	7.359
14	16 19 8.71	2.0924	23 56 17.6	7.253
15	16 21 14.37	2.0961	24 3 29.5	7.145
16	16 23 20.24	2.0998	24 10 35.0	7.037
17	16 25 26.34	2.1035	24 17 33.9	6.927
18	16 27 32.66	2.1072	24 24 26.2	6.818
19	16 29 39.20	2.1108	24 31 12.0	6.708
20	16 31 45.95	2.1143	24 37 51.1	6.596
21	16 33 52.92	2.1180	24 44 23.5	6.483
22	16 36 0.11	2.1216	24 50 49.1	6.371
23	16 38 7.51	2.1251	S. 24 57 8.0	6.258
	SATURDAY 8.			
0	16 40 15.12	2.1286	S. 25 3 20.1	6.144
1	16 42 22.94	2.1321	25 9 25.3	6.029
2	16 44 30.97	2.1356	25 15 23.6	5.914
3	16 46 39.21	2.1390	25 21 15.0	5.798
4	16 48 47.65	2.1423	25 26 59.4	5.682
5	16 50 56.29	2.1457	25 32 36.8	5.565
6	16 53 5.13	2.1490	25 38 7.2	5.447
7	16 55 14.17	2.1523	25 43 30.5	5.328
8	16 57 23.41	2.1556	25 48 46.6	5.208
9	16 59 32.84	2.1588	25 53 55.5	5.089
10	17 1 42.46	2.1619	25 58 57.3	4.969
11	17 3 52.27	2.1650	26 3 51.8	4.848
12	17 6 2.26	2.1680	26 8 39.0	4.726
13	17 8 12.43	2.1711	26 13 18.9	4.604
14	17 10 22.79	2.1741	26 17 51.5	4.482
15	17 12 33.32	2.1769	26 22 16.7	4.358
16	17 14 44.02	2.1798	26 26 34.5	4.234
17	17 16 54.90	2.1827	26 30 44.8	4.110
18	17 19 5.94	2.1854	26 34 47.7	3.986
19	17 21 17.15	2.1881	26 38 43.1	3.860
20	17 23 28.51	2.1907	26 42 30.9	3.734
21	17 25 40.03	2.1933	26 46 11.2	3.608
22	17 27 51.71	2.1958	26 49 43.9	3.481
23	17 30 3.53	2.1983	26 53 8.9	3.353
24	17 32 15.50	2.2007	S. 26 56 26.3	3.226

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 9.			
	h m s	s	° ′ ″	″
0	17 32 15.50	2.2007	S.26 56 26.3	3.226
1	17 34 27.61	2.2030	26 59 36.0	3.098
2	17 36 39.86	2.2053	27 2 38.0	2.969
3	17 38 52.24	2.2075	27 5 32.3	2.840
4	17 41 4.76	2.2097	27 8 18.8	2.710
5	17 43 17.40	2.2117	27 10 57.5	2.580
6	17 45 30.16	2.2137	27 13 28.4	2.450
7	17 47 43.04	2.2157	27 15 51.5	2.320
8	17 49 56.04	2.2175	27 18 6.8	2.189
9	17 52 9.14	2.2193	27 20 14.2	2.058
10	17 54 22.35	2.2210	27 22 13.7	1.926
11	17 56 35.66	2.2226	27 24 5.3	1.793
12	17 58 49.06	2.2242	27 25 48.9	1.661
13	18 1 2.56	2.2257	27 27 24.6	1.528
14	18 3 16.14	2.2271	27 28 52.3	1.396
15	18 5 29.81	2.2284	27 30 12.1	1.263
16	18 7 43.55	2.2296	27 31 23.9	1.129
17	18 9 57.36	2.2308	27 32 27.6	0.995
18	18 12 11.24	2.2319	27 33 23.3	0.862
19	18 14 25.19	2.2329	27 34 11.0	0.728
20	18 16 39.19	2.2338	27 34 50.6	0.593
21	18 18 53.25	2.2347	27 35 22.2	0.459
22	18 21 7.36	2.2355	27 35 45.7	0.325
23	18 23 21.51	2.2362	S.27 36 1.2	0.190
	MONDAY 10.			
0	18 25 35.70	2.2368	S.27 36 8.5	−0.055
1	18 27 49.92	2.2373	27 36 7.8	+0.079
2	18 30 4.17	2.2378	27 35 59.0	0.215
3	18 32 18.45	2.2382	27 35 42.0	0.350
4	18 34 32.75	2.2384	27 35 17.0	0.485
5	18 36 47.06	2.2386	27 34 43.8	0.621
6	18 39 1.38	2.2388	27 34 2.5	0.756
7	18 41 15.71	2.2388	27 33 13.1	0.891
8	18 43 30.04	2.2388	27 32 15.6	1.026
9	18 45 44.36	2.2386	27 31 10.0	1.161
10	18 47 58.67	2.2384	27 29 56.3	1.296
11	18 50 12.97	2.2382	27 28 34.5	1.432
12	18 52 27.25	2.2378	27 27 4.5	1.567
13	18 54 41.50	2.2373	27 25 26.5	1.701
14	18 56 55.72	2.2368	27 23 40.4	1.836
15	18 59 9.91	2.2362	27 21 46.2	1.971
16	19 1 24.06	2.2354	27 19 43.9	2.105
17	19 3 38.16	2.2347	27 17 33.6	2.239
18	19 5 52.22	2.2338	27 15 15.2	2.373
19	19 8 6.22	2.2329	27 12 48.8	2.507
20	19 10 20.17	2.2319	27 10 14.4	2.641
21	19 12 34.05	2.2308	27 7 31.9	2.775
22	19 14 47.87	2.2297	27 4 41.4	2.908
23	19 17 1.61	2.2284	27 1 42.9	3.042
24	19 19 15.28	2.2272	S.26 58 36.4	3.174

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 11.			
	h m s	s	° ′ ″	″
0	19 19 15.28	2.2272	S.26 58 36.4	3.174
1	19 21 28.87	2.2258	26 55 22.0	3.307
2	19 23 42.37	2.2243	26 51 59.6	3.439
3	19 25 55.78	2.2227	26 48 29.3	3.571
4	19 28 9.09	2.2211	26 44 51.1	3.703
5	19 30 22.31	2.2195	26 41 5.0	3.834
6	19 32 35.43	2.2178	26 37 11.0	3.965
7	19 34 48.44	2.2159	26 33 9.2	4.095
8	19 37 1.34	2.2140	26 28 59.6	4.225
9	19 39 14.12	2.2121	26 24 42.2	4.355
10	19 41 26.79	2.2101	26 20 17.0	4.485
11	19 43 39.33	2.2080	26 15 44.0	4.614
12	19 45 51.75	2.2059	26 11 3.3	4.743
13	19 48 4.04	2.2037	26 6 14.9	4.871
14	19 50 16.19	2.2014	26 1 18.8	4.998
15	19 52 28.21	2.1990	25 56 15.1	5.125
16	19 54 40.09	2.1968	25 51 3.8	5.252
17	19 56 51.82	2.1943	25 45 44.9	5.378
18	19 59 3.41	2.1919	25 40 18.4	5.504
19	20 1 14.85	2.1894	25 34 44.4	5.629
20	20 3 26.14	2.1868	25 29 2.9	5.753
21	20 5 37.27	2.1842	25 23 14.0	5.878
22	20 7 48.24	2.1815	25 17 17.6	6.002
23	20 9 59.05	2.1788	S.25 11 13.8	6.124
	WEDNESDAY 12.			
0	20 12 9.69	2.1760	S.25 5 2.7	6.246
1	20 14 20.17	2.1732	24 58 44.3	6.368
2	20 16 30.48	2.1703	24 52 18.6	6.489
3	20 18 40.61	2.1674	24 45 45.6	6.610
4	20 20 50.57	2.1645	24 39 5.4	6.729
5	20 23 0.35	2.1615	24 32 18.1	6.848
6	20 25 9.95	2.1585	24 25 23.6	6.967
7	20 27 19.37	2.1555	24 18 22.0	7.085
8	20 29 28.61	2.1524	24 11 13.4	7.203
9	20 31 37.66	2.1493	24 3 57.7	7.319
10	20 33 46.52	2.1462	23 56 35.1	7.435
11	20 35 55.20	2.1430	23 49 5.5	7.551
12	20 38 3.68	2.1398	23 41 29.0	7.665
13	20 40 11.97	2.1366	23 33 45.7	7.778
14	20 42 20.07	2.1334	23 25 55.6	7.892
15	20 44 27.98	2.1302	23 17 58.7	8.004
16	20 46 35.69	2.1268	23 9 55.1	8.116
17	20 48 43.20	2.1235	23 1 44.8	8.228
18	20 50 50.51	2.1202	22 53 27.8	8.338
19	20 52 57.62	2.1169	22 45 4.3	8.447
20	20 55 4.54	2.1136	22 36 34.2	8.556
21	20 57 11.25	2.1102	22 27 57.6	8.663
22	20 59 17.76	2.1068	22 19 14.6	8.770
23	21 1 24.07	2.1034	22 10 25.2	8.877
24	21 3 30.17	2.1000	S.22 1 29.4	8.983

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 13.			
	h m s	s	° ′ ″	″
0	21 3 30.17	2.1000	S. 22 1 29.4	8.983
1	21 5 36.07	2.0967	21 52 27.3	9.088
2	21 7 41.77	2.0933	21 43 18.9	9.192
3	21 9 47.26	2.0898	21 34 4.3	9.295
4	21 11 52.55	2.0865	21 24 43.5	9.398
5	21 13 57.64	2.0831	21 15 16.6	9.499
6	21 16 2.52	2.0797	21 5 43.6	9.600
7	21 18 7.20	2.0763	20 56 4.6	9.700
8	21 20 11.68	2.0729	20 46 19.6	9.799
9	21 22 15.95	2.0695	20 36 28.7	9.898
10	21 24 20.02	2.0662	20 26 31.9	9.995
11	21 26 23.89	2.0628	20 16 29.3	10.092
12	21 28 27.55	2.0593	20 6 20.9	10.188
13	21 30 31.01	2.0561	19 56 6.8	10.283
14	21 32 34.28	2.0528	19 45 47.0	10.378
15	21 34 37.35	2.0495	19 35 21.5	10.471
16	21 36 40.22	2.0462	19 24 50.5	10.563
17	21 38 42.89	2.0429	19 14 13.9	10.656
18	21 40 45.37	2.0397	19 3 31.8	10.747
19	21 42 47.65	2.0364	18 52 44.3	10.837
20	21 44 49.74	2.0333	18 41 51.4	10.926
21	21 46 51.64	2.0300	18 30 53.2	11.014
22	21 48 53.34	2.0268	18 19 49.7	11.102
23	21 50 54.86	2.0237	S. 18 8 41.0	11.188
	FRIDAY 14.			
0	21 52 56.19	2.0206	S. 17 57 27.1	11.274
1	21 54 57.33	2.0175	17 46 8.1	11.359
2	21 56 58.29	2.0145	17 34 44.0	11.443
3	21 58 59.07	2.0114	17 23 14.9	11.527
4	22 0 59.66	2.0084	17 11 40.8	11.609
5	22 3 0.08	2.0055	17 0 1.8	11.691
6	22 5 0.32	2.0026	16 48 17.9	11.772
7	22 7 0.39	1.9997	16 36 29.2	11.852
8	22 9 0.29	1.9968	16 24 35.7	11.931
9	22 11 0.01	1.9940	16 12 37.5	12.008
10	22 12 59.57	1.9913	16 0 34.7	12.086
11	22 14 58.96	1.9885	15 48 27.2	12.163
12	22 16 58.19	1.9858	15 36 15.2	12.238
13	22 18 57.26	1.9832	15 23 58.7	12.312
14	22 20 56.17	1.9806	15 11 37.8	12.386
15	22 22 54.93	1.9780	14 59 12.4	12.459
16	22 24 53.53	1.9754	14 46 42.7	12.531
17	22 26 51.98	1.9730	14 34 8.7	12.603
18	22 28 50.29	1.9706	14 21 30.4	12.673
19	22 30 48.45	1.9682	14 8 47.9	12.743
20	22 32 46.47	1.9658	13 56 1.3	12.811
21	22 34 44.35	1.9636	13 43 10.6	12.878
22	22 36 42.10	1.9613	13 30 15.9	12.945
23	22 38 39.71	1.9592	13 17 17.2	13.011
24	22 40 37.20	1.9571	S. 13 4 14.6	13.076

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 15.			
	h m s	s	° ′ ″	″
0	22 40 37.20	1.9571	S. 13 4 14.6	13.076
1	22 42 34.56	1.9550	12 51 8.1	13.140
2	22 44 31.80	1.9530	12 37 57.8	13.203
3	22 46 28.92	1.9510	12 24 43.7	13.266
4	22 48 25.92	1.9491	12 11 25.9	13.328
5	22 50 22.81	1.9473	11 58 4.4	13.388
6	22 52 19.59	1.9455	11 44 39.3	13.448
7	22 54 16.27	1.9438	11 31 10.6	13.507
8	22 56 12.85	1.9422	11 17 38.4	13.565
9	22 58 9.33	1.9405	11 4 2.8	13.623
10	23 0 5.71	1.9389	10 50 23.7	13.679
11	23 2 2.00	1.9374	10 36 41.3	13.734
12	23 3 58.20	1.9360	10 22 55.6	13.789
13	23 5 54.32	1.9347	10 9 6.6	13.842
14	23 7 50.36	1.9333	9 55 14.5	13.894
15	23 9 46.32	1.9321	9 41 19.3	13.947
16	23 11 42.21	1.9310	9 27 20.9	13.998
17	23 13 38.04	1.9299	9 13 19.5	14.048
18	23 15 33.80	1.9288	8 59 15.1	14.098
19	23 17 29.50	1.9279	8 45 7.7	14.147
20	23 19 25.15	1.9270	8 30 57.5	14.193
21	23 21 20.74	1.9262	8 16 44.5	14.240
22	23 23 16.29	1.9254	8 2 28.7	14.286
23	23 25 11.79	1.9247	S. 7 48 10.2	14.331
	SUNDAY 16.			
0	23 27 7.25	1.9241	S. 7 33 49.0	14.375
1	23 29 2.68	1.9236	7 19 25.2	14.418
2	23 30 58.08	1.9231	7 4 58.9	14.460
3	23 32 53.45	1.9227	6 50 30.0	14.502
4	23 34 48.80	1.9223	6 35 58.7	14.542
5	23 36 44.13	1.9221	6 21 25.0	14.581
6	23 38 39.45	1.9219	6 6 49.0	14.619
7	23 40 34.76	1.9218	5 52 10.7	14.657
8	23 42 30.07	1.9218	5 37 30.1	14.694
9	23 44 25.38	1.9218	5 22 47.4	14.730
10	23 46 20.69	1.9219	5 8 2.5	14.765
11	23 48 16.01	1.9222	4 53 15.6	14.798
12	23 50 11.35	1.9225	4 38 26.7	14.832
13	23 52 6.71	1.9228	4 23 35.8	14.864
14	23 54 2.09	1.9233	4 8 43.0	14.895
15	23 55 57.50	1.9238	3 53 48.4	14.925
16	23 57 52.94	1.9243	3 38 52.0	14.955
17	23 59 48.42	1.9251	3 23 53.8	14.983
18	0 1 43.95	1.9258	3 8 54.0	15.010
19	0 3 39.52	1.9267	2 53 52.6	15.037
20	0 5 35.15	1.9276	2 38 49.6	15.063
21	0 7 30.83	1.9286	2 23 45.1	15.087
22	0 9 26.58	1.9297	2 8 39.2	15.110
23	0 11 22.39	1.9308	1 53 31.9	15.133
24	0 13 18.28	1.9321	S. 1 38 23.2	15.155

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

MONDAY 17.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	h m s	s	° ′ ″	″
0	0 13 18.28	1.9321	S. 1 38 23.2	15.155
1	0 15 14.24	1.9334	1 23 13.3	15.175
2	0 17 10.29	1.9348	1 8 2.2	15.195
3	0 19 6.42	1.9363	0 52 49.9	15.214
4	0 21 2.65	1.9379	0 37 36.5	15.232
5	0 22 58.97	1.9396	0 22 22.1	15.248
6	0 24 55.40	1.9413	S. 0 7 6.7	15.264
7	0 26 51.93	1.9432	N. 0 8 9.6	15.278
8	0 28 48.58	1.9452	0 23 26.7	15.292
9	0 30 45.35	1.9472	0 38 44.6	15.305
10	0 32 42.24	1.9493	0 54 3.3	15.317
11	0 34 39.26	1.9515	1 9 22.6	15.327
12	0 36 36.42	1.9538	1 24 42.5	15.337
13	0 38 33.72	1.9562	1 40 3.0	15.345
14	0 40 31.16	1.9586	1 55 23.9	15.352
15	0 42 28.75	1.9612	2 10 45.2	15.358
16	0 44 26.50	1.9638	2 26 6.9	15.363
17	0 46 24.41	1.9666	2 41 28.8	15.367
18	0 48 22.49	1.9694	2 56 50.9	15.370
19	0 50 20.74	1.9723	3 12 13.2	15.372
20	0 52 19.17	1.9753	3 27 35.6	15.373
21	0 54 17.78	1.9784	3 42 58.0	15.373
22	0 56 16.58	1.9816	3 58 20.3	15.371
23	0 58 15.57	1.9849	N. 4 13 42.5	15.368

TUESDAY 18.

0	1 0 14.77	1.9883	N. 4 29 4.4	15.363
1	1 2 14.17	1.9918	4 44 26.1	15.359
2	1 4 13.78	1.9953	4 59 47.5	15.353
3	1 6 13.60	1.9989	5 15 8.4	15.345
4	1 8 13.65	2.0027	5 30 28.9	15.337
5	1 10 13.92	2.0065	5 45 48.9	15.328
6	1 12 14.43	2.0105	6 1 8.2	15.316
7	1 14 15.18	2.0145	6 16 26.8	15.303
8	1 16 16.17	2.0186	6 31 44.6	15.290
9	1 18 17.41	2.0228	6 47 1.6	15.276
10	1 20 18.90	2.0271	7 2 17.7	15.259
11	1 22 20.66	2.0315	7 17 32.7	15.242
12	1 24 22.68	2.0359	7 32 46.7	15.223
13	1 26 24.97	2.0405	7 47 59.5	15.203
14	1 28 27.54	2.0452	8 3 11.1	15.183
15	1 30 30.39	2.0499	8 18 21.4	15.160
16	1 32 33.53	2.0548	8 33 30.3	15.136
17	1 34 36.97	2.0598	8 48 37.7	15.111
18	1 36 40.71	2.0648	9 3 43.6	15.084
19	1 38 44.75	2.0699	9 18 47.8	15.056
20	1 40 49.10	2.0752	9 33 50.3	15.026
21	1 42 53.77	2.0805	9 48 50.9	14.995
22	1 44 58.76	2.0859	10 3 49.7	14.963
23	1 47 4.08	2.0914	10 18 46.5	14.930
24	1 49 9.73	2.0970	N. 10 33 41.3	14.894

WEDNESDAY 19.

	h m s	s	° ′ ″	″
0	1 49 9.73	2.0970	N. 10 33 41.3	14.894
1	1 51 15.72	2.1027	10 48 33.9	14.858
2	1 53 22.05	2.1084	11 3 24.3	14.820
3	1 55 28.73	2.1143	11 18 12.3	14.780
4	1 57 35.77	2.1203	11 32 57.9	14.739
5	1 59 43.17	2.1263	11 47 41.0	14.697
6	2 1 50.93	2.1325	12 2 21.5	14.652
7	2 3 59.07	2.1388	12 16 59.2	14.606
8	2 6 7.58	2.1450	12 31 34.2	14.559
9	2 8 16.47	2.1514	12 46 6.3	14.510
10	2 10 25.75	2.1579	13 0 35.4	14.459
11	2 12 35.42	2.1644	13 15 1.4	14.408
12	2 14 45.48	2.1711	13 29 24.3	14.354
13	2 16 55.95	2.1778	13 43 43.9	14.298
14	2 19 6.82	2.1846	13 58 0.1	14.241
15	2 21 18.10	2.1915	14 12 12.8	14.183
16	2 23 29.80	2.1985	14 26 22.0	14.123
17	2 25 41.92	2.2055	14 40 27.5	14.060
18	2 27 54.46	2.2126	14 54 29.2	13.996
19	2 30 7.43	2.2198	15 8 27.0	13.930
20	2 32 20.84	2.2272	15 22 20.8	13.862
21	2 34 34.69	2.2345	15 36 10.5	13.793
22	2 36 48.98	2.2419	15 49 56.0	13.723
23	2 39 3.72	2.2494	N. 16 3 37.2	13.649

THURSDAY 20.

0	2 41 18.91	2.2570	N. 16 17 13.9	13.574
1	2 43 34.56	2.2646	16 30 46.1	13.498
2	2 45 50.66	2.2723	16 44 13.7	13.421
3	2 48 7.23	2.2800	16 57 36.6	13.341
4	2 50 24.26	2.2878	17 10 54.6	13.258
5	2 52 41.77	2.2957	17 24 7.6	13.174
6	2 54 59.75	2.3037	17 37 15.5	13.088
7	2 57 18.21	2.3117	17 50 18.2	13.001
8	2 59 37.15	2.3198	18 3 15.6	12.911
9	3 1 56.58	2.3278	18 16 7.5	12.819
10	3 4 16.49	2.3360	18 28 53.9	12.726
11	3 6 36.90	2.3443	18 41 34.6	12.630
12	3 8 57.80	2.3525	18 54 9.5	12.532
13	3 11 19.20	2.3608	19 6 38.5	12.433
14	3 13 41.09	2.3690	19 19 1.5	12.332
15	3 16 3.48	2.3773	19 31 18.4	12.229
16	3 18 26.37	2.3858	19 43 29.0	12.123
17	3 20 49.77	2.3943	19 55 33.2	12.016
18	3 23 13.68	2.4028	20 7 30.9	11.907
19	3 25 38.10	2.4112	20 19 22.0	11.795
20	3 28 3.02	2.4197	20 31 6.3	11.681
21	3 30 28.46	2.4283	20 42 43.7	11.565
22	3 32 54.41	2.4368	20 54 14.1	11.448
23	3 35 20.87	2.4453	21 5 37.4	11.328
24	3 37 47.84	2.4538	N. 21 16 53.5	11.207

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 21.			
	h m s	s	° ′ ″	″
0	3 37 47.84	2.4538	N.21 16 53.5	11.207
1	3 40 15.33	2.4624	21 28 2.2	11.083
2	3 42 43.33	2.4710	21 39 3.4	10.957
3	3 45 11.85	2.4796	21 49 57.0	10.828
4	3 47 40.88	2.4881	22 0 42.8	10.698
5	3 50 10.42	2.4966	22 11 20.8	10.567
6	3 52 40.47	2.5052	22 21 50.8	10.432
7	3 55 11.04	2.5138	22 32 12.6	10.295
8	3 57 42.12	2.5223	22 42 26.2	10.157
9	4 0 13.71	2.5307	22 52 31.4	10.016
10	4 2 45.80	2.5391	23 2 28.1	9.873
11	4 5 18.40	2.5475	23 12 16.2	9.729
12	4 7 51.50	2.5558	23 21 55.6	9.582
13	4 10 25.10	2.5642	23 31 26.1	9.433
14	4 12 59.20	2.5725	23 40 47.6	9.283
15	4 15 33.80	2.5807	23 50 0.0	9.130
16	4 18 8.89	2.5888	23 59 3.2	8.975
17	4 20 44.46	2.5969	24 7 57.0	8.818
18	4 23 20.52	2.6050	24 16 41.4	8.660
19	4 25 57.06	2.6129	24 25 16.2	8.498
20	4 28 34.07	2.6208	24 33 41.2	8.335
21	4 31 11.56	2.6287	24 41 56.4	8.171
22	4 33 49.51	2.6363	24 50 1.7	8.005
23	4 36 27.92	2.6439	N.24 57 57.0	7.837
	SATURDAY 22.			
0	4 39 6.78	2.6514	N.25 5 42.1	7.666
1	4 41 46.09	2.6589	25 13 16.9	7.493
2	4 44 25.85	2.6663	25 20 41.3	7.319
3	4 47 6.04	2.6734	25 27 55.2	7.143
4	4 49 46.66	2.6805	25 34 58.5	6.965
5	4 52 27.70	2.6875	25 41 51.0	6.785
6	4 55 9.16	2.6944	25 48 32.7	6.604
7	4 57 51.03	2.7011	25 55 3.5	6.422
8	5 0 33.29	2.7077	26 1 23.3	6.237
9	5 3 15.95	2.7142	26 7 31.9	6.050
10	5 5 58.99	2.7205	26 13 29.3	5.862
11	5 8 42.41	2.7267	26 19 15.4	5.673
12	5 11 26.19	2.7327	26 24 50.1	5.482
13	5 14 10.33	2.7385	26 30 13.2	5.289
14	5 16 54.81	2.7442	26 35 24.7	5.094
15	5 19 39.63	2.7497	26 40 24.5	4.899
16	5 22 24.77	2.7550	26 45 12.6	4.702
17	5 25 10.23	2.7602	26 49 48.8	4.504
18	5 27 55.99	2.7651	26 54 13.1	4.305
19	5 30 42.04	2.7699	26 58 25.4	4.104
20	5 33 28.38	2.7746	27 2 25.6	3.902
21	5 36 14.99	2.7790	27 6 13.6	3.698
22	5 39 1.86	2.7832	27 9 49.4	3.495
23	5 41 48.98	2.7873	27 13 13.0	3.290
24	5 44 36.34	2.7912	N.27 16 24.2	3.083

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 23.			
	h m s	s	° ′ ″	″
0	5 44 36.34	2.7912	N.27 16 24.2	3.083
1	5 47 23.92	2.7948	27 19 23.0	2.876
2	5 50 11.72	2.7982	27 22 9.3	2.667
3	5 52 59.71	2.8013	27 24 43.1	2.458
4	5 55 47.88	2.8043	27 27 4.3	2.248
5	5 58 36.23	2.8072	27 29 12.9	2.038
6	6 1 24.74	2.8098	27 31 8.9	1.828
7	6 4 13.40	2.8121	27 32 52.2	1.616
8	6 7 2.19	2.8142	27 34 22.8	1.403
9	6 9 51.10	2.8161	27 35 40.6	1.190
10	6 12 40.12	2.8178	27 36 45.6	0.977
11	6 15 29.23	2.8192	27 37 37.8	0.763
12	6 18 18.42	2.8204	27 38 17.2	0.549
13	6 21 7.68	2.8214	27 38 43.7	0.334
14	6 23 56.99	2.8221	27 38 57.3	+0.119
15	6 26 46.33	2.8226	27 38 58.0	−0.095
16	6 29 35.70	2.8229	27 38 45.9	0.309
17	6 32 25.08	2.8230	27 38 20.9	0.524
18	6 35 14.46	2.8228	27 37 43.0	0.739
19	6 38 3.82	2.8223	27 36 52.2	0.953
20	6 40 53.14	2.8217	27 35 48.6	1.168
21	6 43 42.42	2.8208	27 34 32.1	1.383
22	6 46 31.64	2.8197	27 33 2.7	1.597
23	6 49 20.79	2.8184	N.27 31 20.5	1.810
	MONDAY 24.			
0	6 52 9.85	2.8168	N.27 29 25.5	2.023
1	6 54 58.81	2.8150	27 27 17.7	2.237
2	6 57 47.65	2.8130	27 24 57.1	2.449
3	7 0 36.37	2.8108	27 22 23.8	2.661
4	7 3 24.95	2.8083	27 19 37.8	2.872
5	7 6 13.37	2.8056	27 16 39.2	3.083
6	7 9 1.62	2.8027	27 13 27.9	3.293
7	7 11 49.69	2.7996	27 10 4.1	3.501
8	7 14 37.57	2.7963	27 6 27.8	3.708
9	7 17 25.24	2.7927	27 2 39.1	3.915
10	7 20 12.69	2.7890	26 58 38.0	4.122
11	7 22 59.92	2.7851	26 54 24.5	4.327
12	7 25 46.90	2.7808	26 49 58.8	4.531
13	7 28 33.62	2.7765	26 45 20.8	4.734
14	7 31 20.08	2.7720	26 40 30.7	4.935
15	7 34 6.26	2.7672	26 35 28.6	5.136
16	7 36 52.14	2.7623	26 30 14.5	5.335
17	7 39 37.73	2.7573	26 24 48.4	5.533
18	7 42 23.01	2.7519	26 19 10.5	5.729
19	7 45 7.96	2.7464	26 13 20.9	5.924
20	7 47 52.58	2.7408	26 7 19.6	6.118
21	7 50 36.86	2.7351	26 1 6.8	6.309
22	7 53 20.79	2.7292	25 54 42.5	6.500
23	7 56 4.36	2.7230	25 48 6.8	6.689
24	7 58 47.55	2.7167	N.25 41 19.8	6.876

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 25.			
	h m s	s	° ′ ″	″
0	7 58 47.55	2.7167	N.25 41 19.8	6.876
1	8 1 30.36	2.7103	25 34 21.7	7.061
2	8 4 12.78	2.7038	25 27 12.5	7.245
3	8 6 54.81	2.6971	25 19 52.3	7.427
4	8 9 36.43	2.6903	25 12 21.2	7.607
5	8 12 17.64	2.6833	25 4 39.4	7.785
6	8 14 58.42	2.6762	24 56 47.0	7.962
7	8 17 38.78	2.6690	24 48 44.0	8.137
8	8 20 18.70	2.6617	24 40 30.6	8.310
9	8 22 58.18	2.6543	24 32 6.8	8.481
10	8 25 37.21	2.6468	24 23 32.8	8.650
11	8 28 15.79	2.6392	24 14 48.8	8.817
12	8 30 53.91	2.6314	24 5 54.9	8.981
13	8 33 31.56	2.6236	23 56 51.1	9.144
14	8 36 8.74	2.6157	23 47 37.6	9.305
15	8 38 45.44	2.6077	23 38 14.5	9.463
16	8 41 21.66	2.5997	23 28 42.0	9.620
17	8 43 57.40	2.5916	23 19 0.1	9.775
18	8 46 32.65	2.5833	23 9 9.0	9.928
19	8 49 7.40	2.5751	22 59 8.8	10.078
20	8 51 41.66	2.5668	22 48 59.7	10.225
21	8 54 15.42	2.5585	22 38 41.8	10.371
22	8 56 48.68	2.5501	22 28 15.2	10.515
23	8 59 21.43	2.5416	N.22 17 40.0	10.657
	WEDNESDAY 26.			
0	9 1 53.67	2.5331	N.22 6 56.4	10.796
1	9 4 25.40	2.5246	21 56 4.5	10.933
2	9 6 56.62	2.5161	21 45 4.4	11.068
3	9 9 27.33	2.5075	21 33 56.3	11.201
4	9 11 57.52	2.4988	21 22 40.3	11.331
5	9 14 27.19	2.4903	21 11 16.6	11.459
6	9 16 56.35	2.4817	20 59 45.2	11.585
7	9 19 24.99	2.4730	20 48 6.4	11.708
8	9 21 53.11	2.4643	20 36 20.2	11.831
9	9 24 20.71	2.4557	20 24 26.7	11.950
10	9 26 47.79	2.4470	20 12 26.2	12.067
11	9 29 14.35	2.4384	20 0 18.7	12.183
12	9 31 40.40	2.4298	19 48 4.3	12.296
13	9 34 5.93	2.4212	19 35 43.2	12.406
14	9 36 30.94	2.4125	19 23 15.6	12.513
15	9 38 55.43	2.4039	19 10 41.6	12.620
16	9 41 19.41	2.3954	18 58 1.2	12.724
17	9 43 42.88	2.3868	18 45 14.7	12.825
18	9 46 5.83	2.3783	18 32 22.2	12.925
19	9 48 28.27	2.3698	18 19 23.7	13.023
20	9 50 50.21	2.3614	18 6 19.5	13.118
21	9 53 11.64	2.3529	17 53 9.6	13.211
22	9 55 32.57	2.3446	17 39 54.2	13.302
23	9 57 52.99	2.3363	17 26 33.4	13.390
24	10 0 12.91	2.3278	N.17 13 7.4	13.477

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 27.			
	h m s	s	° ′ ″	″
0	10 0 12.91	2.3278	N.17 13 7.4	13.477
1	10 2 32.34	2.3198	16 59 36.2	13.562
2	10 4 51.28	2.3115	16 46 0.0	13.644
3	10 7 9.72	2.3033	16 32 18.9	13.725
4	10 9 27.68	2.2953	16 18 33.0	13.803
5	10 11 45.16	2.2873	16 4 42.5	13.879
6	10 14 2.15	2.2793	15 50 47.5	13.953
7	10 16 18.67	2.2713	15 36 48.1	14.026
8	10 18 34.71	2.2635	15 22 44.4	14.096
9	10 20 50.29	2.2558	15 8 36.6	14.163
10	10 23 5.40	2.2480	14 54 24.8	14.230
11	10 25 20.05	2.2403	14 40 9.0	14.295
12	10 27 34.24	2.2328	14 25 49.4	14.358
13	10 29 47.98	2.2253	14 11 26.1	14.418
14	10 32 1.27	2.2178	13 56 59.3	14.476
15	10 34 14.11	2.2103	13 42 29.0	14.533
16	10 36 26.51	2.2030	13 27 55.4	14.587
17	10 38 38.47	2.1958	13 13 18.6	14.640
18	10 40 50.00	2.1887	12 58 38.6	14.692
19	10 43 1.11	2.1816	12 43 55.6	14.741
20	10 45 11.79	2.1745	12 29 9.7	14.788
21	10 47 22.05	2.1676	12 14 21.0	14.834
22	10 49 31.90	2.1608	11 59 29.6	14.878
23	10 51 41.34	2.1540	N.11 44 35.7	14.919
	FRIDAY 28.			
0	10 53 50.38	2.1473	N.11 29 39.3	14.960
1	10 55 59.02	2.1408	11 14 40.5	14.998
2	10 58 7.27	2.1343	10 59 39.5	15.035
3	11 0 15.13	2.1278	10 44 36.3	15.071
4	11 2 22.61	2.1215	10 29 31.0	15.105
5	11 4 29.71	2.1152	10 14 23.7	15.137
6	11 6 36.43	2.1090	9 59 14.6	15.167
7	11 8 42.79	2.1029	9 44 3.7	15.196
8	11 10 48.78	2.0969	9 28 51.1	15.223
9	11 12 54.42	2.0910	9 13 36.9	15.248
10	11 14 59.70	2.0852	8 58 21.3	15.273
11	11 17 4.64	2.0795	8 43 4.2	15.296
12	11 19 9.24	2.0738	8 27 45.8	15.317
13	11 21 13.50	2.0683	8 12 26.2	15.336
14	11 23 17.43	2.0628	7 57 5.5	15.353
15	11 25 21.03	2.0573	7 41 43.8	15.370
16	11 27 24.31	2.0521	7 26 21.1	15.386
17	11 29 27.28	2.0469	7 10 57.5	15.400
18	11 31 29.94	2.0418	6 55 33.1	15.412
19	11 33 32.30	2.0368	6 40 8.1	15.423
20	11 35 34.36	2.0318	6 24 42.4	15.432
21	11 37 36.12	2.0270	6 9 16.2	15.440
22	11 39 37.60	2.0223	5 53 49.6	15.448
23	11 41 38.79	2.0176	5 38 22.6	15.453
24	11 43 39.71	2.0131	N. 5 22 55.3	15.457

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 29.			
	h m s	s	° ′ ″	″
0	11 43 39.71	2.0131	N. 5 22 55.3	15.457
1	11 45 40.36	2.0086	5 7 27.8	15.459
2	11 47 40.74	2.0042	4 52 0.2	15.461
3	11 49 40.86	1.9999	4 36 32.5	15.461
4	11 51 40.73	1.9958	4 21 4.9	15.460
5	11 53 40.35	1.9916	4 5 37.3	15.458
6	11 55 39.72	1.9876	3 50 9.9	15.455
7	11 57 38.86	1.9837	3 34 42.7	15.450
8	11 59 37.76	1.9798	3 19 15.9	15.444
9	12 1 36.44	1.9761	3 3 49.4	15.438
10	12 3 34.89	1.9724	2 48 23.3	15.430
11	12 5 33.13	1.9689	2 32 57.8	15.420
12	12 7 31.16	1.9654	2 17 32.9	15.410
13	12 9 28.98	1.9620	2 2 8.6	15.398
14	12 11 26.60	1.9588	1 46 45.1	15.385
15	12 13 24.03	1.9555	1 31 22.4	15.371
16	12 15 21.26	1.9523	1 16 0.6	15.356
17	12 17 18.31	1.9493	1 0 39.7	15.341
18	12 19 15.18	1.9464	0 45 19.7	15.324
19	12 21 11.88	1.9436	0 30 0.8	15.306
20	12 23 8.41	1.9408	N. 0 14 43.0	15.288
21	12 25 4.77	1.9381	S. 0 0 33.7	15.268
22	12 27 0.98	1.9355	0 15 49.1	15.246
23	12 28 57.03	1.9330	S. 0 31 3.2	15.224
	SUNDAY 30.			
0	12 30 52.94	1.9306	S. 0 46 16.0	15.201
1	12 32 48.70	1.9283	1 1 27.3	15.177
2	12 34 44.33	1.9260	1 16 37.2	15.153
3	12 36 39.82	1.9238	1 31 45.6	15.127
4	12 38 35.19	1.9218	1 46 52.4	15.099
5	12 40 30.43	1.9198	2 1 57.5	15.071
6	12 42 25.56	1.9178	2 17 0.9	15.043
7	12 44 20.57	1.9160	2 32 2.6	15.013
8	12 46 15.48	1.9143	2 47 2.4	14.982
9	12 48 10.28	1.9126	3 2 0.4	14.951
10	12 50 4.99	1.9111	3 16 56.5	14.918
11	12 51 59.61	1.9096	3 31 50.6	14.884
12	12 53 54.14	1.9082	3 46 42.6	14.850
13	12 55 48.59	1.9068	4 1 32.6	14.815
14	12 57 42.96	1.9056	4 16 20.4	14.779
15	12 59 37.26	1.9044	4 31 6.1	14.743
16	13 1 31.49	1.9033	4 45 49.6	14.706
17	13 3 25.66	1.9023	5 0 30.8	14.667
18	13 5 19.77	1.9014	5 15 9.6	14.628
19	13 7 13.83	1.9006	5 29 46.1	14.588
20	13 9 7.84	1.8998	5 44 20.1	14.547
21	13 11 1.81	1.8992	5 58 51.7	14.505
22	13 12 55.74	1.8986	6 13 20.7	14.463
23	13 14 49.64	1.8980	6 27 47.2	14.419
24	13 16 43.50	1.8975	S. 6 42 11.0	14.375
	MONDAY 31.			
0	13 16 43.50	1.8975	S. 6 42 11.0	14.375
1	13 18 37.34	1.8972	6 56 32.2	14.330
2	13 20 31.16	1.8968	7 10 50.6	14.284
3	13 22 24.96	1.8966	7 25 6.3	14.238
4	13 24 18.75	1.8965	7 39 19.2	14.191
5	13 26 12.54	1.8964	7 53 29.2	14.143
6	13 28 6.32	1.8963	8 7 36.4	14.095
7	13 30 0.10	1.8964	8 21 40.6	14.045
8	13 31 53.89	1.8966	8 35 41.8	13.994
9	13 33 47.69	1.8968	8 49 39.9	13.943
10	13 35 41.50	1.8970	9 3 35.0	13.892
11	13 37 35.33	1.8974	9 17 27.0	13.840
12	13 39 29.19	1.8979	9 31 15.8	13.787
13	13 41 23.08	1.8984	9 45 1.4	13.733
14	13 43 17.00	1.8989	9 58 43.7	13.678
15	13 45 10.95	1.8995	10 12 22.8	13.623
16	13 47 4.94	1.9003	10 25 58.5	13.567
17	13 48 58.98	1.9011	10 39 30.8	13.510
18	13 50 53.07	1.9019	10 52 59.7	13.453
19	13 52 47.21	1.9028	11 6 25.1	13.394
20	13 54 41.41	1.9038	11 19 47.0	13.336
21	13 56 35.67	1.9048	11 33 5.4	13.276
22	13 58 29.99	1.9059	11 46 20.1	13.215
23	14 0 24.38	1.9071	S. 11 59 31.2	13.154
	TUESDAY, AUGUST 1.			
0	14 2 18.84	1.9083	S. 12 12 38.6	13.093

PHASES OF THE MOON.

		d	h	m
☽	First Quarter . . . July	2	21	20.4
○	Full Moon	11	0	53.4
☾	Last Quarter	18	17	30.8
●	New Moon	25	8	12.0

		d	h
☾	Apogee . . . . . July	8	14.7
☾	Perigee	23	22.6

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	67 14 8	2861	68 47 17	2880	70 20 1	2900	71 52 20	2919
	Regulus	W.	17 27 31	2652	19 5 16	2653	20 42 59	2656	22 20 38	2661
	Spica	E.	37 22 54	2547	35 42 46	2567	34 3 6	2588	32 23 54	2608
	Jupiter	E.	48 59 41	2525	47 19 3	2543	45 38 50	2561	43 59 2	2580
	Antares	E.	83 11 38	2528	81 31 4	2546	79 50 55	2564	78 11 11	2583
2	Sun	W.	79 27 56	3012	80 57 53	3030	82 27 28	3048	83 56 41	3065
	Regulus	W.	30 26 16	2713	32 2 38	2726	33 38 44	2739	35 14 32	2752
	Jupiter	E.	35 46 15	2668	34 8 52	2685	32 31 53	2702	30 55 16	2719
	Antares	E.	69 58 38	2670	68 21 18	2687	66 44 20	2703	65 7 44	2719
	α Aquilæ	E.	115 23 37	3727	114 7 18	3717	112 50 49	3709	111 34 12	3703
3	Sun	W.	91 17 32	3148	92 44 43	3164	94 11 35	3179	95 38 9	3194
	Venus	W.	45 52 15	3162	47 19 10	3176	48 45 48	3190	50 12 8	3204
	Regulus	W.	43 9 10	2818	44 43 13	2831	46 17 0	2844	47 50 31	2856
	Jupiter	E.	22 57 32	2797	21 23 1	2812	19 48 49	2827	18 14 56	2842
	Antares	E.	57 10 3	2797	55 35 31	2811	54 1 17	2825	52 27 22	2838
	α Aquilæ	E.	105 10 1	3694	103 53 9	3696	102 36 18	3700	101 19 31	3704
4	Sun	W.	102 46 44	3262	104 11 39	3275	105 36 20	3287	107 0 47	3299
	Venus	W.	57 19 51	3269	58 44 39	3280	60 9 14	3291	61 33 35	3302
	Regulus	W.	55 34 12	2915	57 6 12	2926	58 37 58	2936	60 9 32	2946
	Antares	E.	44 42 2	2902	43 9 46	2914	41 37 45	2925	40 5 58	2936
	α Aquilæ	E.	94 56 55	3735	93 40 45	3744	92 24 44	3753	91 8 52	3762
5	Sun	W.	113 59 45	3351	115 22 57	3360	116 45 59	3369	118 8 50	3378
	Venus	W.	68 32 23	3351	69 55 36	3359	71 18 39	3367	72 41 33	3374
	Regulus	W.	67 44 19	2990	69 14 44	2998	70 44 59	3006	72 15 4	3013
	Antares	E.	32 30 21	2985	30 59 50	2994	29 29 31	3003	27 59 22	3012
	α Aquilæ	E.	84 52 17	3819	83 37 34	3832	82 23 5	3846	81 8 50	3860
6	Sun	W.	125 0 49	3415	126 22 48	3422	127 44 40	3428	129 6 25	3434
	Regulus	W.	79 43 27	3043	81 12 46	3048	82 41 59	3053	84 11 6	3057
	Venus	W.	79 34 2	3407	80 56 11	3412	82 18 14	3417	83 40 11	3421
	Spica	W.	25 43 7	3069	27 11 54	3071	28 40 39	3073	30 9 22	3074
	Jupiter	W.	13 46 43	3043	15 16 2	3047	16 45 17	3051	18 14 27	3055
	α Aquilæ	E.	75 1 30	3943	73 48 54	3962	72 36 37	3982	71 24 40	4003
	α Pegasi	E.	122 8 2	3542	120 48 24	3533	119 28 36	3523	118 8 37	3514
7	Regulus	W.	91 35 29	3074	93 4 10	3077	94 32 49	3079	96 1 23	3081
	Venus	W.	90 28 52	3438	91 50 25	3440	93 11 56	3442	94 33 24	3444
	Spica	W.	37 32 29	3082	39 1 1	3083	40 29 31	3084	41 58 0	3085
	Jupiter	W.	25 39 12	3070	27 7 58	3072	28 36 41	3074	30 5 22	3076
	α Aquilæ	E.	65 30 27	4128	64 20 52	4157	63 11 45	4188	62 3 8	4221
	α Pegasi	E.	111 26 27	3479	110 5 39	3473	108 44 45	3468	107 23 45	3463
8	Regulus	W.	103 23 53	3086	104 52 20	3087	106 20 46	3087	107 49 12	3086
	Venus	W.	101 20 26	3448	102 41 48	3448	104 3 10	3447	105 24 33	3447
	Spica	W.	49 20 15	3086	50 48 42	3086	52 17 9	3085	53 45 37	3084
	Jupiter	W.	37 28 21	3081	38 56 54	3081	40 25 27	3081	41 54 0	3081
	α Aquilæ	E.	56 28 28	4424	55 23 28	4475	54 19 14	4528	53 15 47	4585
	α Pegasi	E.	100 37 34	3445	99 16 8	3441	97 54 38	3438	96 33 4	3436

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	73 24 15	2938	74 55 45	2957	76 26 52	2975	77 57 35	2994
	Regulus	W.	23 58 11	2668	25 35 34	2678	27 12 43	2689	28 49 37	2701
	Spica	E.	30 45 10	2629	29 6 54	2650	27 29 6	2671	25 51 47	2692
	Jupiter	E.	42 19 40	2598	40 40 43	2616	39 2 10	2634	37 24 1	2651
	Antares	E.	76 31 52	2601	74 52 58	2618	73 14 28	2635	71 36 21	2653
2	Sun	W.	85 25 33	3083	86 54 3	3100	88 22 12	3116	89 50 2	3132
	Regulus	W.	36 50 3	2766	38 25 16	2779	40 0 11	2792	41 34 49	2805
	Jupiter	E.	29 19 1	2735	27 43 7	2751	26 7 35	2766	24 32 23	2782
	Antares	E.	63 31 30	2736	61 55 38	2751	60 20 6	2767	58 44 55	2782
	α Aquilæ	E.	110 17 28	3699	109 0 39	3696	107 43 48	3694	106 26 55	3693
3	Sun	W.	97 4 26	3209	98 30 25	3223	99 56 7	3236	101 21 33	3249
	Venus	W.	51 38 12	3218	53 4 0	3231	54 29 32	3244	55 54 49	3257
	Regulus	W.	49 23 46	2869	50 56 45	2880	52 29 29	2892	54 1 58	2904
	Jupiter	E.	16 41 22	2856	15 8 7	2870	13 35 10	2885	12 2 32	2901
	Antares	E.	50 53 44	2852	49 20 24	2865	47 47 21	2878	46 14 34	2890
	α Aquilæ	E.	100 2 48	3709	98 46 11	3714	97 29 39	3720	96 13 13	3727
4	Sun	W.	108 25 0	3310	109 49 0	3321	111 12 47	3332	112 36 22	3342
	Venus	W.	62 57 44	3313	64 21 41	3323	65 45 26	3332	67 9 0	3342
	Regulus	W.	61 40 53	2955	63 12 2	2965	64 42 59	2974	66 13 44	2982
	Antares	E.	38 34 25	2946	37 3 5	2956	35 31 58	2966	34 1 3	2975
	α Aquilæ	E.	89 53 11	3772	88 37 40	3783	87 22 21	3794	86 7 13	3806
5	Sun	W.	119 31 32	3386	120 54 4	3394	122 16 27	3401	123 38 42	3408
	Venus	W.	74 4 19	3382	75 26 56	3389	76 49 25	3395	78 11 47	3401
	Regulus	W.	73 45 1	3020	75 14 49	3026	76 44 29	3032	78 14 1	3038
	Antares	E.	26 29 24	3020	24 59 36	3029	23 29 59	3037	22 0 32	3044
	α Aquilæ	E.	79 54 50	3875	78 41 5	3891	77 27 36	3908	76 14 24	3925
6	Sun	W.	130 28 3	3439	131 49 35	3444	133 11 1	3449	134 32 22	3454
	Regulus	W.	85 40 8	3061	87 9 5	3065	88 37 57	3069	90 6 45	3072
	Venus	W.	85 2 4	3425	86 23 52	3429	87 45 35	3432	89 7 15	3435
	Spica	W.	31 38 4	3076	33 6 43	3078	34 35 20	3079	36 3 55	3080
	Jupiter	W.	19 43 32	3058	21 12 33	3061	22 41 30	3065	24 10 23	3068
	α Aquilæ	E.	70 13 3	4025	69 1 48	4049	67 50 56	4074	66 40 29	4100
	α Pegasi	E.	116 48 28	3506	115 28 10	3497	114 7 43	3490	112 47 8	3485
7	Regulus	W.	97 29 56	3082	98 58 27	3083	100 26 57	3084	101 55 25	3085
	Venus	W.	95 54 51	3445	97 16 16	3446	98 37 40	3447	99 59 3	3447
	Spica	W.	43 26 28	3086	44 54 55	3086	46 23 22	3087	47 51 48	3086
	Jupiter	W.	31 34 1	3078	33 2 38	3079	34 31 13	3080	35 59 47	3080
	α Aquilæ	E.	60 55 2	4256	59 47 28	4294	58 40 30	4334	57 34 9	4378
	α Pegasi	E.	106 2 40	3459	104 41 30	3455	103 20 16	3451	101 58 57	3448
8	Regulus	W.	109 17 39	3086	110 46 6	3085	112 14 34	3084	113 43 3	3083
	Venus	W.	106 45 56	3446	108 7 20	3445	109 28 46	3444	110 50 13	3442
	Spica	W.	55 14 6	3083	56 42 36	3082	58 11 8	3080	59 39 42	3078
	Jupiter	W.	43 22 33	3080	44 51 7	3079	46 19 42	3078	47 48 18	3077
	α Aquilæ	E.	52 13 9	4648	51 11 25	4715	50 10 38	4788	49 10 52	4866
	α Pegasi	E.	95 11 28	3433	93 49 49	3431	92 28 8	3429	91 6 24	3427

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
9	VENUS	W.	112 11 42	3440	113 33 13	3438	114 54 46	3436	116 16 22	3434
	Spica	W.	61 8 18	3077	62 36 56	3075	64 5 36	3072	65 34 20	3070
	JUPITER	W.	49 16 56	3075	50 45 35	3073	52 14 17	3072	53 43 1	3070
	Antares	W.	15 16 3	3101	16 44 12	3094	18 12 29	3088	19 40 53	3082
	α Pegasi	E.	89 44 38	3426	88 22 51	3424	87 1 2	3423	85 39 12	3423
10	Spica	W.	72 58 45	3056	74 27 49	3052	75 56 57	3048	77 26 10	3045
	JUPITER	W.	61 7 23	3056	62 36 26	3053	64 5 32	3050	65 34 43	3047
	Antares	W.	27 4 28	3060	28 33 27	3055	30 2 32	3051	31 31 42	3046
	α Pegasi	E.	78 49 54	3423	77 28 3	3424	76 6 13	3425	74 44 25	3427
	α Arietis	E.	120 59 24	3138	119 32 0	3132	118 4 29	3126	116 36 51	3120
11	Spica	W.	84 53 26	3024	86 23 9	3019	87 52 58	3014	89 22 53	3010
	JUPITER	W.	73 1 45	3027	74 31 24	3022	76 1 9	3018	77 31 0	3013
	Antares	W.	38 58 57	3083	40 28 41	3018	41 58 32	3013	43 28 29	3008
	α Pegasi	E.	67 56 5	3444	66 34 38	3449	65 13 16	3455	63 52 1	3462
	α Arietis	E.	109 16 52	3091	107 48 31	3085	106 20 4	3079	104 51 29	3073
	SATURN	E.	119 50 26	3056	118 21 22	3051	116 52 12	3046	115 22 56	3041
12	Spica	W.	96 53 58	2984	98 24 31	2978	99 55 11	2973	101 25 58	2967
	JUPITER	W.	85 1 44	2988	86 32 12	2982	88 2 47	2976	89 33 29	2970
	Antares	W.	50 59 50	2981	52 30 27	2975	54 1 11	2969	55 32 3	2963
	α Pegasi	E.	57 8 2	3510	55 47 49	3524	54 27 52	3540	53 8 12	3558
	α Arietis	E.	97 26 47	3044	95 57 29	3038	94 28 3	3032	92 58 30	3026
	SATURN	E.	107 54 59	3014	106 25 3	3008	104 55 0	3002	103 24 50	2996
13	Spica	W.	109 1 46	2936	110 33 19	2929	112 5 1	2923	113 36 51	2916
	JUPITER	W.	97 8 53	2940	98 40 21	2933	100 11 58	2926	101 43 44	2919
	Antares	W.	63 8 19	2931	64 39 58	2924	66 11 47	2917	67 43 44	2909
	α Arietis	E.	85 28 48	2995	83 58 29	2988	82 28 1	2981	80 57 25	2975
	SATURN	E.	95 52 0	2964	94 21 2	2957	92 49 55	2950	91 18 39	2942
	Aldebaran	E.	115 51 49	2981	114 21 13	2973	112 50 26	2965	111 19 29	2957
14	JUPITER	W.	109 24 46	2883	110 57 27	2875	112 30 18	2867	114 3 19	2859
	Antares	W.	75 25 49	2872	76 58 44	2864	78 31 49	2856	80 5 4	2848
	α Arietis	E.	73 22 24	2942	71 50 59	2935	70 19 25	2929	68 47 43	2922
	SATURN	E.	83 40 1	2905	82 7 48	2897	80 35 25	2889	79 2 52	2880
	Aldebaran	E.	103 42 12	2916	102 10 13	2907	100 38 4	2898	99 5 43	2890
15	Antares	W.	87 54 4	2804	89 28 27	2795	91 3 2	2785	92 37 50	2775
	α Aquilæ	W.	48 22 37	4581	49 25 18	4489	50 29 20	4402	51 34 39	4321
	α Arietis	E.	61 7 5	2889	59 34 32	2883	58 1 51	2876	56 29 1	2870
	SATURN	E.	71 17 23	2837	69 43 43	2828	68 9 51	2818	66 35 47	2808
	Aldebaran	E.	91 21 12	2845	89 47 43	2836	88 14 2	2827	86 40 9	2817
	SUN	E.	134 56 17	3175	133 29 38	3163	132 2 45	3152	130 35 38	3140
16	Antares	W.	100 35 0	2785	102 11 7	2714	103 47 28	2703	105 24 4	2692
	α Aquilæ	W.	57 18 24	3992	58 30 11	3938	59 42 52	3887	60 56 25	3838
	α Arietis	E.	48 43 2	2843	47 9 29	2839	45 35 51	2835	44 2 8	2831
	SATURN	E.	58 42 14	2758	57 6 51	2748	55 31 15	2738	53 55 25	2727
	Aldebaran	E.	78 47 35	2768	77 12 25	2758	75 37 2	2748	74 1 25	2738
	SUN	E.	123 16 33	3081	121 48 0	3069	120 19 12	3056	118 50 8	3044

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
9	VENUS	W.	117 38 0	3431	118 59 41	3429	120 21 25	3426	121 43 13	3423
	Spica	W.	67 3 6	3068	68 31 55	3065	70 0 48	3062	71 29 45	3059
	JUPITER	W.	55 11 47	3068	56 40 36	3065	58 9 28	3062	59 38 24	3059
	Antares	W.	21 9 24	3077	22 38 1	3072	24 6 45	3068	25 35 34	3064
	α Pegasi	E.	84 17 21	3423	82 55 30	3422	81 33 38	3422	80 11 46	3422
10	Spica	W.	78 55 27	3041	80 24 49	3037	81 54 16	3033	83 23 48	3028
	JUPITER	W.	67 3 58	3043	68 33 18	3039	70 2 42	3035	71 32 11	3031
	Antares	W.	33 0 58	3042	34 30 19	3037	35 59 46	3032	37 29 19	3028
	α Pegasi	E.	73 22 39	3429	72 0 55	3432	70 39 15	3435	69 17 38	3439
	α Arietis	E.	115 9 5	3114	113 41 12	3108	112 13 13	3102	110 45 6	3096
11	Spica	W.	90 52 53	3005	92 22 59	3000	93 53 12	2994	95 23 32	2989
	JUPITER	W.	79 0 57	3009	80 30 59	3003	82 1 8	2998	83 31 23	2993
	Antares	W.	44 58 32	3003	46 28 41	2997	47 58 57	2992	49 29 20	2986
	α Pegasi	E.	62 30 54	3469	61 9 55	3478	59 49 6	3488	58 28 28	3498
	α Arietis	E.	103 22 47	3068	101 53 58	3062	100 25 2	3056	98 55 58	3050
	SATURN	E.	113 53 34	3035	112 24 5	3030	110 54 30	3025	109 24 48	3019
12	Spica	W.	102 56 52	2961	104 27 54	2955	105 59 3	2949	107 30 20	2942
	JUPITER	W.	91 4 19	2964	92 35 16	2958	94 6 21	2952	95 37 33	2946
	Antares	W.	57 3 3	2957	58 34 10	2950	60 5 25	2944	61 36 48	2938
	α Pegasi	E.	51 48 52	3578	50 29 53	3599	49 11 18	3623	47 53 9	3649
	α Arietis	E.	91 28 49	3020	89 59 0	3014	88 29 4	3007	86 59 0	3001
	SATURN	E.	101 54 32	2989	100 24 6	2983	98 53 32	2977	97 22 50	2970
13	Spica	W.	115 8 50	2909	116 40 58	2901	118 13 15	2894	119 45 41	2887
	JUPITER	W.	103 15 38	2912	104 47 41	2905	106 19 53	2898	107 52 15	2891
	Antares	W.	69 15 51	2902	70 48 7	2896	72 20 31	2888	73 53 5	2880
	α Arietis	E.	79 26 41	2969	77 55 49	2962	76 24 49	2956	74 53 41	2949
	SATURN	E.	89 47 14	2935	88 15 40	2928	86 43 57	2920	85 12 4	2912
	Aldebaran	E.	109 48 22	2949	108 17 5	2941	106 45 38	2932	105 14 0	2924
14	JUPITER	W.	115 36 31	2850	117 9 54	2842	118 43 27	2834	120 17 11	2825
	Antares	W.	81 38 29	2840	83 12 5	2831	84 45 53	2822	86 19 53	2813
	α Arietis	E.	67 15 52	2916	65 43 53	2909	64 11 46	2902	62 39 30	2895
	SATURN	E.	77 30 8	2872	75 57 13	2864	74 24 8	2855	72 50 51	2846
	Aldebaran	E.	97 33 11	2881	96 0 28	2873	94 27 34	2864	92 54 29	2855
15	Antares	W.	94 12 50	2766	95 48 3	2756	97 23 28	2746	98 59 7	2735
	α Aquilæ	W.	52 41 12	4247	53 48 54	4177	54 57 42	4111	56 7 33	4049
	α Arietis	E.	54 56 4	2864	53 22 59	2859	51 49 47	2853	50 16 28	2848
	SATURN	E.	65 1 30	2799	63 27 1	2789	61 52 19	2779	60 17 23	2769
	Aldebaran	E.	85 6 3	2808	83 31 45	2798	81 57 15	2788	80 22 32	2778
	SUN	E.	129 8 17	3189	127 40 43	3117	126 12 54	3105	124 44 51	3093
16	Antares	W.	107 0 55	2681	108 38 1	2669	110 15 23	2657	111 53 0	2646
	α Aquilæ	W.	62 10 48	3793	63 25 57	3750	64 41 50	3709	65 58 27	3672
	α Arietis	E.	42 28 21	2889	40 54 31	2828	39 20 39	2828	37 46 47	2828
	SATURN	E.	52 19 20	2716	50 43 1	2704	49 6 27	2693	47 29 38	2682
	Aldebaran	E.	72 25 35	2727	70 49 31	2716	69 13 12	2706	67 36 40	2695
	SUN	E.	117 20 50	3031	115 51 16	3018	114 21 26	3005	112 51 19	2992

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
17	*a* Aquilæ	W.	67 15 44	3635	68 33 40	3600	69 52 14	3567	71 11 24	3535
	Fomalhaut	W.	34 16 14	3249	35 41 25	3190	37 7 46	3136	38 35 12	3087
	SATURN	E.	45 52 33	2671	44 15 14	2659	42 37 39	2648	40 59 49	2636
	Aldebaran	E.	65 59 53	2684	64 22 52	2674	62 45 37	2663	61 8 7	2652
	SUN	E.	111 20 56	2978	109 50 16	2965	108 19 20	2951	106 48 6	2938
18	*a* Aquilæ	W.	77 55 22	3401	79 17 37	3378	80 40 19	3356	82 3 26	3336
	Fomalhaut	W.	46 6 6	2889	47 38 39	2856	49 11 54	2826	50 45 48	2797
	SATURN	E.	32 46 42	2579	31 7 18	2569	29 27 40	2558	27 47 47	2547
	Aldebaran	E.	52 57 2	2600	51 18 6	2590	49 38 57	2580	47 59 34	2571
	SUN	E.	99 7 33	2866	97 34 31	2852	96 1 11	2838	94 27 32	2823
19	*a* Aquilæ	W.	89 4 30	3250	90 29 40	3236	91 55 7	3224	93 20 48	3213
	Fomalhaut	W.	58 44 13	2671	60 21 32	2649	61 59 21	2626	63 37 40	2606
	a Pegasi	W.	41 19 50	3313	42 43 47	3242	44 9 7	3177	45 35 44	3117
	Aldebaran	E.	39 39 42	2533	37 59 14	2528	36 18 39	2524	34 37 59	2522
	SUN	E.	86 34 29	2749	84 58 54	2734	83 22 59	2719	81 46 44	2704
20	*a* Aquilæ	W.	100 31 58	3179	101 58 33	3176	103 25 11	3176	104 51 49	3178
	Fomalhaut	W.	71 56 7	2510	73 37 6	2493	75 18 29	2476	77 0 16	2460
	a Pegasi	W.	53 5 18	2881	54 38 2	2842	56 11 36	2805	57 45 57	2772
	SUN	E.	73 40 32	2631	72 2 19	2616	70 23 46	2602	68 44 54	2588
21	Fomalhaut	W.	85 34 36	2388	87 18 28	2376	89 2 39	2364	90 47 6	2352
	a Pegasi	W.	65 47 56	2632	67 26 8	2609	69 4 51	2587	70 44 5	2566
	SUN	E.	60 25 54	2523	58 45 12	2511	57 4 14	2499	55 22 59	2488
22	Fomalhaut	W.	99 33 7	2307	101 18 57	2300	103 4 56	2295	104 51 3	2290
	a Pegasi	W.	79 6 41	2483	80 48 19	2470	82 30 14	2458	84 12 26	2448
	SUN	E.	46 53 2	2440	45 10 24	2432	43 27 34	2425	41 44 35	2419
23	*a* Pegasi	W.	92 46 35	2414	94 29 51	2411	96 13 10	2409	97 56 32	2409
	SUN	E.	33 7 55	2404	31 24 26	2405	29 40 58	2408	27 57 35	2413
27	SUN	W.	23 16 14	2630	24 54 28	2635	26 32 35	2642	28 10 33	2650
	JUPITER	E.	69 23 38	2251	67 36 27	2266	65 49 38	2282	64 3 12	2298
	Antares	E.	102 41 2	2231	100 53 20	2246	99 6 1	2262	97 19 5	2278
28	SUN	W.	36 16 50	2714	37 53 11	2730	39 29 11	2746	41 4 51	2762
	JUPITER	E.	55 17 3	2382	53 33 3	2400	51 49 28	2418	50 6 19	2436
	Antares	E.	88 30 20	2361	86 45 49	2378	85 1 42	2395	83 18 0	2413
29	SUN	W.	48 57 32	2851	50 30 54	2869	52 3 53	2887	53 36 29	2905
	JUPITER	E.	41 36 59	2527	39 56 24	2546	38 16 15	2564	36 36 31	2583
	Antares	E.	74 45 54	2503	73 4 45	2522	71 24 2	2540	69 43 44	2558
30	SUN	W.	61 13 35	2997	62 43 51	3016	64 13 44	3034	65 43 15	3052
	JUPITER	E.	28 24 10	2675	26 46 56	2692	25 10 6	2710	23 33 40	2728
	Antares	E.	61 28 26	2647	59 50 35	2665	58 13 8	2682	56 36 4	2698
31	SUN	W.	73 5 24	3138	74 32 48	3154	75 59 52	3170	77 26 37	3186
	Antares	E.	48 36 16	2781	47 1 23	2796	45 26 50	2811	43 52 37	2826

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
17	α Aquilæ	W.	72 31 9	3506	73 51 26	3478	75 12 15	3451	76 33 34	3425
	Fomalhaut	W.	40 3 38	3041	41 33 0	2999	43 3 14	2960	44 34 17	2924
	SATURN	E.	39 21 43	2624	37 43 21	2613	36 4 44	2601	34 25 51	2590
	Aldebaran	E.	59 30 23	2641	57 52 24	2631	56 14 11	2621	54 35 44	2610
	SUN	E.	105 16 35	2924	103 44 46	2910	102 12 40	2896	100 40 16	2881
18	α Aquilæ	W.	83 26 56	3316	84 50 49	3298	86 15 3	3281	87 39 37	3265
	Fomalhaut	W.	52 20 20	2770	53 55 27	2744	55 31 9	2718	57 7 25	2694
	SATURN	E.	26 7 39	2538	24 27 19	2530	22 46 48	2523	21 6 7	2517
	Aldebaran	E.	46 19 59	2562	44 40 11	2553	43 0 12	2545	41 20 2	2539
	SUN	E.	92 53 34	2808	91 19 17	2794	89 44 41	2779	88 9 45	2764
19	α Aquilæ	W.	94 46 42	3203	96 12 48	3194	97 39 4	3188	99 5 28	3183
	Fomalhaut	W.	65 16 27	2585	66 55 42	2566	68 35 24	2547	70 15 33	2528
	α Pegasi	W.	47 3 33	3062	48 32 29	3011	50 2 28	2964	51 33 26	2921
	Aldebaran	E.	32 57 17	2522	31 16 35	2525	29 35 57	2532	27 55 28	2542
	SUN	E.	80 10 9	2689	78 33 14	2675	76 56 0	2660	75 18 26	2645
20	α Aquilæ	W.	106 18 25	3182	107 44 57	3188	109 11 21	3195	110 37 36	3205
	Fomalhaut	W.	78 42 26	2444	80 24 58	2430	82 7 50	2415	83 51 3	2401
	α Pegasi	W.	59 21 2	2741	60 56 48	2711	62 33 14	2683	64 10 17	2656
	SUN	E.	67 5 43	2574	65 26 13	2561	63 46 25	2548	62 6 18	2535
21	Fomalhaut	W.	92 31 50	2342	94 16 49	2332	96 2 2	2323	97 47 28	2314
	α Pegasi	W.	72 23 47	2547	74 3 55	2529	75 44 28	2512	77 25 24	2497
	SUN	E.	53 41 28	2477	51 59 42	2467	50 17 42	2457	48 35 28	2448
22	Fomalhaut	W.	106 37 17	2286	108 23 37	2284	110 10 0	2283	111 56 25	2282
	α Pegasi	W.	85 54 53	2438	87 37 33	2430	89 20 25	2424	91 3 26	2418
	SUN	E.	40 1 27	2414	38 18 11	2410	36 34 50	2406	34 51 24	2404
23	α Pegasi	W.	99 39 54	2410	101 23 14	2412	103 6 31	2416	104 49 42	2422
	SUN	E.	26 14 19	2422	24 31 15	2433	22 48 27	2446	21 5 58	2463
27	SUN	W.	29 48 20	2660	31 25 53	2672	33 3 10	2685	34 40 9	2699
	JUPITER	E.	62 17 10	2315	60 31 32	2331	58 46 18	2348	57 1 28	2365
	Antares	E.	95 32 33	2294	93 46 24	2309	92 0 38	2326	90 15 17	2343
28	SUN	W.	42 40 9	2779	44 15 4	2797	45 49 36	2814	47 23 46	2832
	JUPITER	E.	48 23 35	2455	46 41 18	2472	44 59 26	2491	43 18 0	2509
	Antares	E.	81 34 44	2431	79 51 53	2449	78 9 28	2467	76 27 28	2485
29	SUN	W.	55 8 41	2924	56 40 29	2942	58 11 54	2961	59 42 56	2979
	JUPITER	E.	34 57 13	2601	33 18 20	2620	31 39 52	2638	30 1 49	2656
	Antares	E.	68 3 51	2576	66 24 23	2594	64 45 20	2612	63 6 41	2629
30	SUN	W.	67 12 23	3069	68 41 10	3087	70 9 35	3104	71 37 40	3121
	JUPITER	E.	21 57 38	2746	20 21 59	2764	18 46 44	2782	17 11 52	2800
	Antares	E.	54 59 22	2716	53 23 3	2732	51 47 6	2748	50 11 30	2765
31	SUN	W.	78 53 3	3201	80 19 11	3216	81 45 1	3231	83 10 34	3245
	Antares	E.	42 18 44	2841	40 45 9	2855	39 11 53	2869	37 38 55	2883

AT GREENWICH APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Semi-diameter.	Sidereal Time of Semi-diameter Passing Meridian.	Equation of Time, to be Added to Apparent Time.	Diff. for 1 Hour.
		h m s	s	° ′ ″	″	′ ″	s	m s	s
Tues.	1	8 42 7.95	+9.732	N.18 14 55.8	−37.12	15 47.37	66.68	6 12.45	0.125
Wed.	2	8 46 1.20	9.706	17 59 55.9	37.86	15 47.50	66.60	6 9.15	0.150
Thur.	3	8 49 53.82	9.680	17 44 38.5	38.59	15 47.63	66.51	6 5.23	0.176
Frid.	4	8 53 45.82	+9.654	17 29 3.8	−39.30	15 47.76	66.42	6 0.68	0.202
Sat.	5	8 57 37.20	9.628	17 13 12.2	40.00	15 47.90	66.33	5 55.52	0.228
SUN.	6	9 1 27.96	9.602	16 57 3.9	40.69	15 48.05	66.25	5 49.74	0.253
Mon.	7	9 5 18.12	+9.577	16 40 39.2	−41.37	15 48.20	66.16	5 43.36	0.278
Tues.	8	9 9 7.67	9.552	16 23 58.4	42.03	15 48.35	66.08	5 36.37	0.303
Wed.	9	9 12 56.63	9.528	16 7 1.8	42.68	15 48.50	66.00	5 28.79	0.328
Thur.	10	9 16 45.00	+9.503	15 49 49.7	−43.32	15 48.66	65.91	5 20.63	0.352
Frid.	11	9 20 32.79	9.479	15 32 22.5	43.95	15 48.81	65.83	5 11.89	0.376
Sat.	12	9 24 20.02	9.456	15 14 40.4	44.56	15 48.96	65.74	5 2.59	0.399
SUN.	13	9 28 6.69	+9.433	14 56 43.6	−45.17	15 49.12	65.66	4 52.73	0.422
Mon.	14	9 31 52.82	9.411	14 38 32.4	45.76	15 49.29	65.58	4 42.33	0.444
Tues.	15	9 35 38.42	9.389	14 20 7.2	46.34	15 49.45	65.50	4 31.40	0.466
Wed.	16	9 39 23.49	+9.367	14 1 28.2	−46.91	15 49.62	65.42	4 19.95	0.488
Thur.	17	9 43 8.05	9.346	13 42 35.7	47.46	15 49.80	65.35	4 7.99	0.509
Frid.	18	9 46 52.11	9.326	13 23 30.1	48.00	15 49.98	65.27	3 55.53	0.530
Sat.	19	9 50 35.68	+9.305	13 4 11.6	−48.53	15 50.16	65.20	3 42.58	0.550
SUN.	20	9 54 18.77	9.285	12 44 40.5	49.05	15 50.34	65.12	3 29.15	0.570
Mon.	21	9 58 1.38	9.266	12 24 57.2	49.55	15 50.53	65.05	3 15.24	0.589
Tues.	22	10 1 43.53	+9.247	12 5 2.0	−50.04	15 50.72	64.98	3 0.87	0.608
Wed.	23	10 5 25.22	9.228	11 44 55.2	50.52	15 50.92	64.92	2 46.05	0.627
Thur.	24	10 9 6.47	9.210	11 24 37.2	50.98	15 51.12	64.85	2 30.79	0.645
Frid.	25	10 12 47.29	+9.192	11 4 8.4	−51.42	15 51.32	64.79	2 15.10	0.663
Sat.	26	10 16 27.68	9.174	10 43 29.0	51.85	15 51.53	64.73	1 58.98	0.681
SUN.	27	10 20 7.65	9.157	10 22 39.4	52.27	15 51.74	64.67	1 42.44	0.698
Mon.	28	10 23 47.21	+9.140	10 1 40.0	−52.67	15 51.96	64.61	1 25.49	0.715
Tues.	29	10 27 26.37	9.124	9 40 31.2	53.06	15 52.18	64.56	1 8.15	0.731
Wed.	30	10 31 5.16	9.109	9 19 13.2	53.44	15 52.41	64.51	0 50.43	0.746
Thur.	31	10 34 43.60	9.094	8 57 46.4	53.80	15 52.64	64.46	0 32.36	0.760
Frid.	32	10 38 21.69	+9.080	N. 8 36 11.0	−54.14	15 52.87	64.41	0 13.95	0.774

NOTE.—The mean time of semidiameter passing the meridian may be found by subtracting 0s.18 from the sidereal time.
The sign − prefixed to the hourly change of declination indicates that north declinations are decreasing.

AT GREENWICH MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Equation of Time, to be Subtracted from Mean Time.	Diff. for 1 Hour.	Sidereal Time, or Right Ascension of Mean Sun.
		h m s	s	° ′ ″	″	m s	s	h m s
Tues.	1	8 42 6.94	+9.732	N.18 14 59.6	−37.12	6 12.46	+0.125	8 35 54.48
Wed.	2	8 46 0.20	9.706	17 59 59.8	37.86	6 9.16	0.150	8 39 51.04
Thur.	3	8 49 52.84	9.680	17 44 42.4	38.59	6 5.24	0.176	8 43 47.60
Frid.	4	8 53 44.85	+9.654	17 29 7.7	−39.30	6 0.70	+0.202	8 47 44.15
Sat.	5	8 57 36.25	9.629	17 13 16.1	40.00	5 55.54	0.228	8 51 40.71
SUN.	6	9 1 27.03	9.603	16 57 7.8	40.69	5 49.77	0.253	8 55 37.27
Mon.	7	9 5 17.21	+9.578	16 40 43.1	−41.37	5 43.39	+0.278	8 59 33.82
Tues.	8	9 9 6.78	9.553	16 24 2.3	42.03	5 36.40	0.303	9 3 30.38
Wed.	9	9 12 55.76	9.529	16 7 5.7	42.68	5 28.82	0.328	9 7 26.94
Thur.	10	9 16 44.16	+9.505	15 49 53.6	−43.32	5 20.66	+0.352	9 11 23.49
Frid.	11	9 20 31.98	9.481	15 32 26.3	43.95	5 11.92	0.376	9 15 20.05
Sat.	12	9 24 19.23	9.457	15 14 44.1	44.57	5 2.62	0.399	9 19 16.60
SUN.	13	9 28 5.92	+9.434	14 56 47.2	−45.17	4 52.76	+0.422	9 23 13.16
Mon.	14	9 31 52.07	9.412	14 38 36.0	45.76	4 42.36	0.444	9 27 9.71
Tues.	15	9 35 37.70	9.390	14 20 10.7	46.34	4 31.43	0.466	9 31 6.27
Wed.	16	9 39 22.81	+9.369	14 1 31.6	−46.91	4 19.99	+0.488	9 35 2.82
Thur.	17	9 43 7.41	9.348	13 42 39.0	47.47	4 8.03	0.509	9 38 59.38
Frid.	18	9 46 51.51	9.327	13 23 33.2	48.01	3 55.57	0.530	9 42 55.94
Sat.	19	9 50 35.11	+9.307	13 4 14.6	−48.54	3 42.62	+0.550	9 46 52.49
SUN.	20	9 54 18.23	9.287	12 44 43.4	49.06	3 29.18	0.570	9 50 49.05
Mon.	21	9 58 0.88	9.267	12 24 59.9	49.56	3 15.27	0.589	9 54 45.60
Tues.	22	10 1 43.06	+9.248	12 5 4.5	−50.05	3 0.90	+0.608	9 58 42.16
Wed.	23	10 5 24.79	9.230	11 44 57.5	50.53	2 46.08	0.627	10 2 38.71
Thur.	24	10 9 6.08	9.212	11 24 39.3	50.99	2 30.82	0.645	10 6 35.26
Frid.	25	10 12 46.94	+9.194	11 4 10.3	−51.43	2 15.12	+0.663	10 10 31.82
Sat.	26	10 16 27.37	9.176	10 43 30.7	51.86	1 59.00	0.681	10 14 28.37
SUN.	27	10 20 7.38	9.159	10 22 40.9	52.28	1 42.46	0.698	10 18 24.93
Mon.	28	10 23 46.99	+9.142	10 1 41.2	−52.68	1 25.51	+0.715	10 22 21.48
Tues.	29	10 27 26.20	9.126	9 40 32.1	53.07	1 8.16	0.731	10 26 18.04
Wed.	30	10 31 5.03	9.111	9 19 13.9	53.45	0 50.44	0.746	10 30 14.59
Thur.	31	10 34 43.51	9.096	8 57 46.8	53.81	0 32.37	0.760	10 34 11.15
Frid.	32	10 38 21.65	+9.082	N. 8 36 11.2	−54.16	0 13.95	+0.774	10 38 7.70

NOTE.—The semidiameter for mean noon may be assumed the same as that for apparent noon.
The sign − prefixed to the hourly change of declination indicates that north declinations are decreasing.

Diff. for 1 Hour, +9s.8565. (Table III.)

AT GREENWICH MEAN NOON.

Day of the Month.	Day of the Year.	THE SUN'S TRUE LONGITUDE. λ	THE SUN'S TRUE LONGITUDE. λ′	Diff. for 1 Hour.	THE SUN'S LATITUDE.	Logarithm of the Radius Vector of the Earth.	Diff. for 1 Hour.	Mean Time of Sidereal Noon.
		° ′ ″	′ ″	″	″			h m s
1	213	128 6 48.9	6 28.3	143.52	+ 0.19	0.006 4298	− 24.1	15 21 34.13
2	214	129 4 13.7	3 53.0	143.55	+ 0.07	0.006 3709	24.9	15 17 38.22
3	215	130 1 39.2	1 18.3	143.58	− 0.05	0.006 3103	25.6	15 13 42.30
4	216	130 59 5.4	58 44.3	143.61	− 0.15	0.006 2480	− 26.3	15 9 46.39
5	217	131 56 32.3	56 11.1	143.64	0.25	0.006 1841	26.9	15 5 50.48
6	218	132 54 0.0	53 38.7	143.67	0.33	0.006 1188	27.5	15 1 54.57
7	219	133 51 28.6	51 7.1	143.71	− 0.37	0.006 0521	− 28.1	14 57 58.66
8	220	134 48 58.1	48 36.4	143.75	0.40	0.005 9841	28.6	14 54 2.75
9	221	135 46 28.6	46 6.8	143.79	0.40	0.005 9149	29.1	14 50 6.84
10	222	136 44 0.1	43 38.2	143.84	− 0.38	0.005 8446	− 29.6	14 46 10.93
11	223	137 41 32.8	41 10.7	143.89	0.33	0.005 7731	30.0	14 42 15.02
12	224	138 39 6.7	38 44.4	143.94	0.25	0.005 7004	30.5	14 38 19.11
13	225	139 36 41.9	36 19.5	144.00	− 0.15	0.005 6265	− 31.0	14 34 23.20
14	226	140 34 18.6	33 56.0	144.06	− 0.03	0.005 5515	31.5	14 30 27.29
15	227	141 31 56.7	31 34.0	144.12	+ 0.10	0.005 4753	32.0	14 26 31.38
16	228	142 29 36.3	29 13.5	144.18	+ 0.24	0.005 3977	− 32.6	14 22 35.47
17	229	143 27 17.5	26 54.6	144.25	0.37	0.005 3187	33.2	14 18 39.56
18	230	144 25 0.4	24 37.3	144.32	0.49	0.005 2381	33.9	14 14 43.66
19	231	145 22 44.9	22 21.7	144.39	+ 0.59	0.005 1558	− 34.7	14 10 47.75
20	232	146 20 31.0	20 7.7	144.46	0.66	0.005 0717	35.4	14 6 51.84
21	233	147 18 18.8	17 55.3	144.52	0.71	0.004 9857	36.2	14 2 55.93
22	234	148 16 8.2	15 44.6	144.59	+ 0.72	0.004 8977	− 37.1	13 59 0.02
23	235	149 13 59.2	13 35.4	144.66	0.69	0.004 8077	38.0	13 55 4.11
24	236	150 11 51.7	11 27.8	144.72	0.64	0.004 7156	38.8	13 51 8.20
25	237	151 9 45.6	9 21.6	144.78	+ 0.56	0.004 6214	− 39.6	13 47 12.29
26	238	152 7 41.0	7 16.9	144.84	0.46	0.004 5252	40.4	13 43 16.38
27	239	153 5 37.8	5 13.5	144.89	0.35	0.004 4272	41.2	13 39 20.47
28	240	154 3 35.9	3 11.5	144.95	+ 0.22	0.004 3274	− 41.9	13 35 24.57
29	241	155 1 35.3	1 10.8	145.00	+ 0.09	0.004 2259	42.6	13 31 28.66
30	242	155 59 36.1	59 11.5	145.06	− 0.03	0.004 1230	43.2	13 27 32.75
31	243	156 57 38.2	57 13.5	145.12	0.14	0.004 0187	43.7	13 23 36.84
32	244	157 55 41.7	55 16.9	145.18	− 0.24	0.003 9132	− 44.2	13 19 40.93

NOTE.—The longitudes in the column λ are referred to the true equinox of their own date, while those in the column λ′ are referred to the mean equinox of the beginning of the Besselian fictitious year.

Diff. for 1 Hour, − 9ˢ.8296. (Table II.)

GREENWICH MEAN TIME.

THE MOON'S

Day of the Month.	SEMIDIAMETER. Noon.	SEMIDIAMETER. Midnight.	HORIZONTAL PARALLAX. Noon.	Diff. for 1 Hour.	HORIZONTAL PARALLAX. Midnight.	Diff. for 1 Hour.	UPPER TRANSIT. Meridian of Greenwich.	Diff. for 1 Hour.	AGE. Noon.
	′ ″	′ ″	° ′ ″	″	° ′ ″	″	h m	m	d
1	15 7.5	15 2.6	55 24.9	−1.61	55 6.7	−1.42	5 36.2	1.81	6.7
2	14 58.3	14 54.6	54 50.8	1.22	54 37.4	1.01	6 20.2	1.86	7.7
3	14 51.6	14 49.3	54 26.5	0.81	54 18.0	0.61	7 5.9	1.95	8.7
4	14 47.7	14 46.6	54 11.9	−0.41	54 8.1	−0.22	7 53.8	2.04	9.7
5	14 46.2	14 46.4	54 6.6	−0.04	54 7.2	+0.13	8 43.7	2.12	10.7
6	14 47.1	14 48.3	54 9.8	+0.29	54 14.2	0.44	9 35.0	2.15	11.7
7	14 49.9	14 52.0	54 20.3	+0.57	54 27.9	+0.69	10 26.6	2.14	12.7
8	14 54.4	14 57.2	54 36.8	0.79	54 46.9	0.88	11 17.3	2.08	13.7
9	15 0.2	15 3.5	54 58.0	0.96	55 10.0	1.03	12 6.2	2.00	14.7
10	15 7.0	15 10.6	55 22.7	+1.09	55 36.0	+1.13	12 53.1	1.91	15.7
11	15 14.4	15 18.3	55 49.9	1.17	56 4.2	1.21	13 38.2	1.85	16.7
12	15 22.3	15 26.4	56 18.9	1.24	56 33.9	1.26	14 22.2	1.82	17.7
13	15 30.5	15 34.7	56 49.1	+1.28	57 4.6	+1.30	15 6.0	1.84	18.7
14	15 39.0	15 43.3	57 20.3	1.31	57 36.1	1.32	15 50.9	1.90	19.7
15	15 47.6	15 52.0	57 52.0	1.32	58 7.9	1.32	16 38.1	2.03	20.7
16	15 56.3	16 0.5	58 23.7	+1.31	58 39.3	+1.28	17 29.0	2.20	21.7
17	16 4.6	16 8.6	58 54.4	1.23	59 8.8	1.16	18 24.4	2.42	22.7
18	16 12.3	16 15.6	59 22.3	1.07	59 34.5	0.95	19 24.6	2.59	23.7
19	16 18.5	16 20.9	59 45.2	+0.81	59 54.0	+0.64	20 28.2	2.69	24.7
20	16 22.6	16 23.7	60 0.5	+0.44	60 4.5	+0.21	21 32.7	2.66	25.7
21	16 24.0	16 23.5	60 5.6	−0.03	60 3.7	−0.29	22 35.0	2.52	26.7
22	16 22.1	16 19.9	59 58.6	−0.56	59 50.3	−0.82	23 33.0	2.31	27.7
23	16 16.8	16 12.9	59 38.9	1.07	59 24.5	1.31	○	. .	28.7
24	16 8.2	16 2.9	59 7.4	1.52	58 47.9	1.70	0 26.2	2.13	0.3
25	15 57.1	15 50.9	58 26.6	−1.83	58 3.9	−1.93	1 15.3	1.97	1.3
26	15 44.4	15 37.8	57 40.2	1.98	57 16.1	2.00	2 1.3	1.87	2.3
27	15 31.3	15 24.9	56 52.1	1.97	56 28.7	1.91	2 45.6	1.83	3.3
28	15 18.8	15 13.1	56 6.2	−1.82	55 45.1	−1.69	3 29.4	1.83	4.3
29	15 7.8	15 3.0	55 25.7	1.54	55 8.2	1.37	4 13.8	1.87	5.3
30	14 58.8	14 55.3	54 52.9	1.18	54 40.0	0.98	4 59.5	1.94	6.3
31	14 52.4	14 50.3	54 29.5	0.77	54 21.6	0.55	5 47.0	2.02	7.3
32	14 48.8	14 48.1	54 16.2	−0.34	54 13.4	−0.13	6 36.5	2.10	8.3

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 1.			
	h m s	s	° ′ ″	″
0	14 2 18.84	1.9083	S. 12 12 38.6	13.093
1	14 4 13.38	1.9097	12 25 42.3	13.030
2	14 6 8.00	1.9110	12 38 42.2	12.967
3	14 8 2.70	1.9124	12 51 38.3	12.903
4	14 9 57.49	1.9139	13 4 30.6	12.839
5	14 11 52.37	1.9154	13 17 19.0	12.773
6	14 13 47.34	1.9170	13 30 3.4	12.707
7	14 15 42.41	1.9188	13 42 43.8	12.640
8	14 17 37.59	1.9205	13 55 20.2	12.573
9	14 19 32.87	1.9223	14 7 52.6	12.506
10	14 21 28.26	1.9241	14 20 20.9	12.437
11	14 23 23.76	1.9259	14 32 45.0	12.367
12	14 25 19.37	1.9278	14 45 4.9	12.297
13	14 27 15.10	1.9299	14 57 20.6	12.226
14	14 29 10.96	1.9320	15 9 32.0	12.154
15	14 31 6.94	1.9341	15 21 39.1	12.083
16	14 33 3.05	1.9363	15 33 41.9	12.010
17	14 34 59.29	1.9385	15 45 40.3	11.936
18	14 36 55.67	1.9408	15 57 34.2	11.862
19	14 38 52.18	1.9430	16 9 23.7	11.787
20	14 40 48.83	1.9454	16 21 8.6	11.711
21	14 42 45.63	1.9479	16 32 49.0	11.635
22	14 44 42.58	1.9503	16 44 24.8	11.558
23	14 46 39.67	1.9528	S. 16 55 55.9	11.480
	WEDNESDAY 2.			
0	14 48 36.91	1.9553	S. 17 7 22.4	11.402
1	14 50 34.31	1.9580	17 18 44.2	11.323
2	14 52 31.87	1.9607	17 30 1.2	11.243
3	14 54 29.59	1.9633	17 41 13.4	11.163
4	14 56 27.47	1.9660	17 52 20.7	11.082
5	14 58 25.51	1.9688	18 3 23.2	11.000
6	15 0 23.72	1.9717	18 14 20.7	10.917
7	15 2 22.11	1.9745	18 25 13.2	10.833
8	15 4 20.66	1.9773	18 36 0.7	10.750
9	15 6 19.39	1.9803	18 46 43.2	10.666
10	15 8 18.30	1.9833	18 57 20.6	10.580
11	15 10 17.39	1.9863	19 7 52.8	10.494
12	15 12 16.66	1.9893	19 18 19.9	10.408
13	15 14 16.11	1.9924	19 28 41.7	10.320
14	15 16 15.75	1.9955	19 38 58.3	10.232
15	15 18 15.57	1.9986	19 49 9.6	10.144
16	15 20 15.58	2.0018	19 59 15.6	10.054
17	15 22 15.79	2.0051	20 9 16.1	9.963
18	15 24 16.19	2.0083	20 19 11.2	9.873
19	15 26 16.78	2.0115	20 29 0.9	9.782
20	15 28 17.57	2.0148	20 38 45.0	9.689
21	15 30 18.55	2.0180	20 48 23.6	9.597
22	15 32 19.73	2.0213	20 57 56.6	9.503
23	15 34 21.11	2.0247	21 7 23.9	9.408
24	15 36 22.69	2.0280	S. 21 16 45.6	9.314

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 3.			
	h m s	s	° ′ ″	″
0	15 36 22.69	2.0280	S. 21 16 45.6	9.314
1	15 38 24.47	2.0314	21 26 1.6	9.218
2	15 40 26.46	2.0348	21 35 11.8	9.122
3	15 42 28.65	2.0383	21 44 16.2	9.025
4	15 44 31.05	2.0417	21 53 14.8	8.927
5	15 46 33.65	2.0451	22 2 7.4	8.828
6	15 48 36.46	2.0486	22 10 54.1	8.729
7	15 50 39.48	2.0521	22 19 34.9	8.630
8	15 52 42.71	2.0556	22 28 9.7	8.529
9	15 54 46.15	2.0591	22 36 38.4	8.428
10	15 56 49.80	2.0625	22 45 1.0	8.326
11	15 58 53.65	2.0660	22 53 17.5	8.223
12	16 0 57.72	2.0696	23 1 27.8	8.120
13	16 3 2.00	2.0731	23 9 31.9	8.016
14	16 5 6.49	2.0766	23 17 29.7	7.911
15	16 7 11.19	2.0801	23 25 21.2	7.806
16	16 9 16.10	2.0836	23 33 6.4	7.700
17	16 11 21.22	2.0871	23 40 45.2	7.593
18	16 13 26.55	2.0906	23 48 17.6	7.487
19	16 15 32.09	2.0942	23 55 43.6	7.378
20	16 17 37.85	2.0977	24 3 3.0	7.269
21	16 19 43.81	2.1011	24 10 15.9	7.160
22	16 21 49.98	2.1046	24 17 22.2	7.050
23	16 23 56.36	2.1080	S. 24 24 21.9	6.939
	FRIDAY 4.			
0	16 26 2.94	2.1114	S. 24 31 14.9	6.828
1	16 28 9.73	2.1149	24 38 1.2	6.716
2	16 30 16.73	2.1184	24 44 40.8	6.603
3	16 32 23.94	2.1218	24 51 13.6	6.490
4	16 34 31.35	2.1252	24 57 39.6	6.377
5	16 36 38.96	2.1285	25 3 58.8	6.263
6	16 38 46.77	2.1318	25 10 11.1	6.147
7	16 40 54.78	2.1352	25 16 16.4	6.031
8	16 43 2.99	2.1385	25 22 14.8	5.915
9	16 45 11.40	2.1418	25 28 6.2	5.798
10	16 47 20.00	2.1450	25 33 50.5	5.680
11	16 49 28.80	2.1483	25 39 27.8	5.562
12	16 51 37.79	2.1514	25 44 58.0	5.443
13	16 53 46.97	2.1546	25 50 21.0	5.324
14	16 55 56.34	2.1577	25 55 36.9	5.204
15	16 58 5.89	2.1608	26 0 45.5	5.083
16	17 0 15.63	2.1638	26 5 46.9	4.963
17	17 2 25.55	2.1668	26 10 41.0	4.841
18	17 4 35.64	2.1697	26 15 27.8	4.718
19	17 6 45.91	2.1727	26 20 7.2	4.595
20	17 8 56.36	2.1757	26 24 39.2	4.472
21	17 11 6.99	2.1785	26 29 3.8	4.348
22	17 13 17.78	2.1812	26 33 21.0	4.224
23	17 15 28.73	2.1839	26 37 30.7	4.099
24	17 17 39.85	2.1867	S. 26 41 32.9	3.974

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute
	SATURDAY 5.			
	h m s	s	° ′ ″	″
0	17 17 39.85	2.1867	S. 26 41 32.9	3.974
1	17 19 51.13	2.1893	26 45 27.6	3.848
2	17 22 2.57	2.1919	26 49 14.7	3.722
3	17 24 14.16	2.1944	26 52 54.2	3.595
4	17 26 25.90	2.1969	26 56 26.1	3.468
5	17 28 37.79	2.1994	26 59 50.3	3.339
6	17 30 49.83	2.2018	27 3 6.8	3.211
7	17 33 2.01	2.2042	27 6 15.6	3.083
8	17 35 14.33	2.2064	27 9 16.7	2.953
9	17 37 26.78	2.2086	27 12 10.0	2.824
10	17 39 39.36	2.2108	27 14 55.6	2.695
11	17 41 52.07	2.2128	27 17 33.4	2.564
12	17 44 4.90	2.2148	27 20 3.3	2.433
13	17 46 17.85	2.2168	27 22 25.4	2.303
14	17 48 30.92	2.2187	27 24 39.6	2.171
15	17 50 44.09	2.2205	27 26 45.9	2.039
16	17 52 57.38	2.2223	27 28 44.3	1.908
17	17 55 10.77	2.2240	27 30 34.8	1.775
18	17 57 24.26	2.2256	27 32 17.3	1.642
19	17 59 37.84	2.2272	27 33 51.8	1.509
20	18 1 51.52	2.2288	27 35 18.4	1.376
21	18 4 5.29	2.2302	27 36 36.9	1.242
22	18 6 19.14	2.2314	27 37 47.4	1.108
23	18 8 33.06	2.2327	S. 27 38 49.9	0.974
	SUNDAY 6.			
0	18 10 47.06	2.2339	S. 27 39 44.3	0.840
1	18 13 1.13	2.2351	27 40 30.7	0.705
2	18 15 15.27	2.2361	27 41 8.9	0.570
3	18 17 29.46	2.2370	27 41 39.1	0.436
4	18 19 43.71	2.2380	27 42 1.2	0.301
5	18 21 58.02	2.2388	27 42 15.2	0.165
6	18 24 12.37	2.2396	27 42 21.0	−0.029
7	18 26 26.77	2.2403	27 42 18.7	+0.106
8	18 28 41.20	2.2408	27 42 8.3	0.241
9	18 30 55.67	2.2413	27 41 49.8	0.377
10	18 33 10.16	2.2418	27 41 23.1	0.513
11	18 35 24.68	2.2422	27 40 48.3	0.648
12	18 37 39.22	2.2424	27 40 5.3	0.785
13	18 39 53.77	2.2427	27 39 14.1	0.921
14	18 42 8.34	2.2428	27 38 14.8	1.056
15	18 44 22.91	2.2428	27 37 7.4	1.192
16	18 46 37.48	2.2428	27 35 51.8	1.328
17	18 48 52.04	2.2427	27 34 28.0	1.465
18	18 51 6.60	2.2425	27 32 56.0	1.601
19	18 53 21.14	2.2423	27 31 15.9	1.737
20	18 55 35.67	2.2419	27 29 27.6	1.873
21	18 57 50.17	2.2414	27 27 31.2	2.008
22	19 0 4.64	2.2409	27 25 26.6	2.144
23	19 2 19.08	2.2404	27 23 13.9	2.279
24	19 4 33.49	2.2398	S. 27 20 53.1	2.414

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 7.			
	h m s	s	° ′ ″	″
0	19 4 33.49	2.2398	S. 27 20 53.1	2.414
1	19 6 47.85	2.2390	27 18 24.2	2.550
2	19 9 2.17	2.2382	27 15 47.1	2.686
3	19 11 16.44	2.2373	27 13 1.9	2.821
4	19 13 30.65	2.2364	27 10 8.6	2.955
5	19 15 44.81	2.2354	27 7 7.3	3.089
6	19 17 58.90	2.2343	27 3 57.9	3.224
7	19 20 12.92	2.2331	27 0 40.4	3.358
8	19 22 26.87	2.2319	26 57 14.9	3.492
9	19 24 40.75	2.2307	26 53 41.4	3.626
10	19 26 54.55	2.2293	26 49 59.8	3.759
11	19 29 8.26	2.2278	26 46 10.3	3.892
12	19 31 21.88	2.2263	26 42 12.8	4.025
13	19 33 35.41	2.2247	26 38 7.3	4.158
14	19 35 48.84	2.2230	26 33 53.9	4.289
15	19 38 2.17	2.2213	26 29 32.6	4.421
16	19 40 15.40	2.2196	26 25 3.4	4.552
17	19 42 28.52	2.2177	26 20 26.4	4.683
18	19 44 41.52	2.2158	26 15 41.5	4.813
19	19 46 54.41	2.2138	26 10 48.8	4.944
20	19 49 7.18	2.2118	26 5 48.2	5.074
21	19 51 19.83	2.2098	26 0 39.9	5.203
22	19 53 32.35	2.2076	25 55 23.9	5.332
23	19 55 44.74	2.2053	S. 25 50 0.1	5.460
	TUESDAY 8.			
0	19 57 56.99	2.2031	S. 25 44 28.7	5.588
1	20 0 9.11	2.2008	25 38 49.6	5.715
2	20 2 21.09	2.1984	25 33 2.9	5.843
3	20 4 32.92	2.1960	25 27 8.5	5.969
4	20 6 44.61	2.1936	25 21 6.6	6.094
5	20 8 56.15	2.1911	25 14 57.2	6.220
6	20 11 7.54	2.1885	25 8 40.2	6.345
7	20 13 18.77	2.1858	25 2 15.8	6.469
8	20 15 29.84	2.1832	24 55 43.9	6.593
9	20 17 40.76	2.1806	24 49 4.6	6.716
10	20 19 51.51	2.1778	24 42 18.0	6.838
11	20 22 2.10	2.1751	24 35 24.0	6.960
12	20 24 12.52	2.1723	24 28 22.8	7.081
13	20 26 22.77	2.1694	24 21 14.3	7.202
14	20 28 32.85	2.1665	24 13 58.6	7.322
15	20 30 42.75	2.1636	24 6 35.7	7.441
16	20 32 52.48	2.1607	23 59 5.7	7.560
17	20 35 2.03	2.1577	23 51 28.5	7.678
18	20 37 11.40	2.1547	23 43 44.3	7.795
19	20 39 20.59	2.1516	23 35 53.1	7.912
20	20 41 29.59	2.1485	23 27 54.9	8.027
21	20 43 38.41	2.1454	23 19 49.8	8.143
22	20 45 47.04	2.1423	23 11 37.8	8.257
23	20 47 55.48	2.1391	23 3 19.0	8.371
24	20 50 3.73	2.1359	S. 22 54 53.3	8.485

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 9.			
	h m s	s	° ′ ″	″
0	20 50 3.73	2.1359	S. 22 54 53.3	8.485
1	20 52 11.79	2.1328	22 46 20.9	8.597
2	20 54 19.66	2.1296	22 37 41.7	8.708
3	20 56 27.34	2.1264	22 28 55.9	8.819
4	20 58 34.83	2.1232	22 20 3.4	8.929
5	21 0 42.12	2.1198	22 11 4.4	9.038
6	21 2 49.21	2.1166	22 1 58.9	9.146
7	21 4 56.11	2.1134	21 52 46.9	9.253
8	21 7 2.82	2.1102	21 43 28.5	9.360
9	21 9 9.33	2.1068	21 34 3.7	9.467
10	21 11 15.64	2.1035	21 24 32.5	9.572
11	21 13 21.75	2.1003	21 14 55.1	9.676
12	21 15 27.67	2.0970	21 5 11.4	9.780
13	21 17 33.39	2.0937	20 55 21.5	9.883
14	21 19 38.91	2.0904	20 45 25.5	9.984
15	21 21 44.24	2.0872	20 35 23.4	10.085
16	21 23 49.37	2.0838	20 25 15.3	10.185
17	21 25 54.30	2.0805	20 15 1.2	10.285
18	21 27 59.03	2.0772	20 4 41.1	10.383
19	21 30 3.56	2.0739	19 54 15.2	10.481
20	21 32 7.90	2.0707	19 43 43.4	10.578
21	21 34 12.04	2.0674	19 33 5.8	10.674
22	21 36 15.99	2.0643	19 22 22.5	10.768
23	21 38 19.75	2.0610	S. 19 11 33.6	10.863
	THURSDAY 10.			
0	21 40 23.31	2.0578	S. 19 0 39.0	10.956
1	21 42 26.68	2.0546	18 49 38.9	11.048
2	21 44 29.86	2.0514	18 38 33.2	11.140
3	21 46 32.85	2.0483	18 27 22.1	11.231
4	21 48 35.65	2.0451	18 16 5.5	11.321
5	21 50 38.26	2.0419	18 4 43.6	11.409
6	21 52 40.68	2.0388	17 53 16.4	11.497
7	21 54 42.92	2.0358	17 41 44.0	11.583
8	21 56 44.98	2.0328	17 30 6.4	11.670
9	21 58 46.85	2.0297	17 18 23.6	11.755
10	22 0 48.54	2.0267	17 6 35.8	11.838
11	22 2 50.05	2.0238	16 54 43.0	11.922
12	22 4 51.39	2.0208	16 42 45.2	12.004
13	22 6 52.55	2.0179	16 30 42.5	12.086
14	22 8 53.54	2.0150	16 18 34.9	12.167
15	22 10 54.35	2.0121	16 6 22.5	12.246
16	22 12 54.99	2.0093	15 54 5.4	12.324
17	22 14 55.47	2.0066	15 41 43.6	12.402
18	22 16 55.78	2.0038	15 29 17.2	12.478
19	22 18 55.92	2.0010	15 16 46.2	12.555
20	22 20 55.90	1.9984	15 4 10.6	12.630
21	22 22 55.73	1.9958	14 51 30.6	12.703
22	22 24 55.40	1.9932	14 38 46.2	12.776
23	22 26 54.91	1.9906	14 25 57.5	12.848
24	22 28 54.27	1.9881	S. 14 13 4.5	12.918

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 11.			
	h m s	s	° ′ ″	″
0	22 28 54.27	1.9881	S. 14 13 4.5	12.918
1	22 30 53.48	1.9857	14 0 7.3	12.988
2	22 32 52.55	1.9833	13 47 5.9	13.058
3	22 34 51.47	1.9808	13 34 0.4	13.126
4	22 36 50.25	1.9785	13 20 50.8	13.193
5	22 38 48.89	1.9763	13 7 37.2	13.259
6	22 40 47.40	1.9741	12 54 19.7	13.324
7	22 42 45.78	1.9718	12 40 58.3	13.389
8	22 44 44.02	1.9697	12 27 33.0	13.452
9	22 46 42.14	1.9677	12 14 4.0	13.514
10	22 48 40.14	1.9656	12 0 31.3	13.576
11	22 50 38.01	1.9636	11 46 54.9	13.636
12	22 52 35.77	1.9617	11 33 15.0	13.695
13	22 54 33.41	1.9598	11 19 31.5	13.753
14	22 56 30.94	1.9580	11 5 44.6	13.811
15	22 58 28.37	1.9563	10 51 54.2	13.868
16	23 0 25.69	1.9545	10 38 0.5	13.923
17	23 2 22.91	1.9528	10 24 3.5	13.978
18	23 4 20.03	1.9513	10 10 3.2	14.031
19	23 6 17.06	1.9498	9 55 59.8	14.083
20	23 8 14.00	1.9483	9 41 53.2	14.135
21	23 10 10.85	1.9468	9 27 43.6	14.185
22	23 12 7.61	1.9454	9 13 31.0	14.235
23	23 14 4.30	1.9442	S. 8 59 15.4	14.283
	SATURDAY 12.			
0	23 16 0.91	1.9429	S. 8 44 57.0	14.331
1	23 17 57.45	1.9418	8 30 35.7	14.378
2	23 19 53.92	1.9407	8 16 11.7	14.423
3	23 21 50.33	1.9396	8 1 45.0	14.468
4	23 23 46.67	1.9386	7 47 15.6	14.511
5	23 25 42.96	1.9377	7 32 43.7	14.553
6	23 27 39.19	1.9368	7 18 9.2	14.595
7	23 29 35.37	1.9360	7 3 32.3	14.635
8	23 31 31.51	1.9353	6 48 53.0	14.675
9	23 33 27.60	1.9346	6 34 11.3	14.714
10	23 35 23.66	1.9341	6 19 27.3	14.752
11	23 37 19.69	1.9335	6 4 41.1	14.788
12	23 39 15.68	1.9330	5 49 52.7	14.823
13	23 41 11.65	1.9327	5 35 2.3	14.858
14	23 43 7.60	1.9324	5 20 9.8	14.892
15	23 45 3.54	1.9322	5 5 15.3	14.924
16	23 46 59.46	1.9319	4 50 18.9	14.955
17	23 48 55.37	1.9318	4 35 20.7	14.985
18	23 50 51.28	1.9318	4 20 20.7	15.015
19	23 52 47.19	1.9318	4 5 18.9	15.043
20	23 54 43.10	1.9320	3 50 15.5	15.070
21	23 56 39.03	1.9322	3 35 10.5	15.097
22	23 58 34.97	1.9324	3 20 3.9	15.123
23	0 0 30.92	1.9328	3 4 55.8	15.147
24	0 2 26.90	1.9333	S. 2 49 46.3	15.169

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 13.			
	h m s	s	° ′ ″	″
0	0 2 26.90	1.9333	S. 2 49 46.3	15.169
1	0 4 22.91	1.9338	2 34 35.5	15.191
2	0 6 18.95	1.9343	2 19 23.4	15.213
3	0 8 15.02	1.9349	2 4 10.0	15.233
4	0 10 11.14	1.9357	1 48 55.5	15.251
5	0 12 7.30	1.9364	1 33 39.9	15.269
6	0 14 3.51	1.9373	1 18 23.2	15.286
7	0 15 59.78	1.9383	1 3 5.6	15.302
8	0 17 56.11	1.9393	0 47 47.0	15.317
9	0 19 52.50	1.9404	0 32 27.6	15.330
10	0 21 48.96	1.9416	0 17 7.4	15.342
11	0 23 45.49	1.9428	S. 0 1 46.5	15.353
12	0 25 42.10	1.9442	N. 0 13 35.0	15.363
13	0 27 38.79	1.9456	0 28 57.1	15.373
14	0 29 35.57	1.9472	0 44 19.8	15.382
15	0 31 32.45	1.9488	0 59 42.9	15.388
16	0 33 29.42	1.9503	1 15 6.4	15.394
17	0 35 26.49	1.9521	1 30 30.2	15.399
18	0 37 23.67	1.9540	1 45 54.3	15.403
19	0 39 20.97	1.9559	2 1 18.5	15.405
20	0 41 18.38	1.9578	2 16 42.9	15.407
21	0 43 15.91	1.9599	2 32 7.3	15.407
22	0 45 13.57	1.9621	2 47 31.7	15.406
23	0 47 11.36	1.9643	N. 3 2 56.0	15.404
	MONDAY 14.			
0	0 49 9.29	1.9667	N. 3 18 20.2	15.402
1	0 51 7.36	1.9691	3 33 44.2	15.397
2	0 53 5.58	1.9716	3 49 7.8	15.391
3	0 55 3.95	1.9742	4 4 31.1	15.384
4	0 57 2.48	1.9768	4 19 53.9	15.376
5	0 59 1.17	1.9795	4 35 16.2	15.368
6	1 1 0.02	1.9823	4 50 38.0	15.358
7	1 2 59.05	1.9853	5 5 59.2	15.347
8	1 4 58.25	1.9883	5 21 19.6	15.333
9	1 6 57.64	1.9913	5 36 39.2	15.320
10	1 8 57.21	1.9945	5 51 58.0	15.305
11	1 10 56.98	1.9978	6 7 15.8	15.288
12	1 12 56.94	2.0011	6 22 32.6	15.271
13	1 14 57.11	2.0045	6 37 48.3	15.253
14	1 16 57.48	2.0080	6 53 2.9	15.233
15	1 18 58.07	2.0116	7 8 16.2	15.211
16	1 20 58.87	2.0153	7 23 28.2	15.189
17	1 22 59.90	2.0190	7 38 38.9	15.166
18	1 25 1.15	2.0228	7 53 48.1	15.140
19	1 27 2.64	2.0268	8 8 55.7	15.113
20	1 29 4.36	2.0308	8 24 1.7	15.086
21	1 31 6.33	2.0349	8 39 6.0	15.057
22	1 33 8.55	2.0391	8 54 8.5	15.027
23	1 35 11.02	2.0433	9 9 9.2	14.996
24	1 37 13.75	2.0477	N. 9 24 8.0	14.963

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 15.			
	h m s	s	° ′ ″	″
0	1 37 13.75	2.0477	N. 9 24 8.0	14.963
1	1 39 16.74	2.0521	9 39 4.8	14.928
2	1 41 20.00	2.0567	9 53 59.4	14.893
3	1 43 23.54	2.0613	10 8 51.9	14.856
4	1 45 27.35	2.0659	10 23 42.1	14.818
5	1 47 31.45	2.0707	10 38 30.0	14.778
6	1 49 35.83	2.0755	10 53 15.5	14.737
7	1 51 40.51	2.0805	11 7 58.5	14.695
8	1 53 45.49	2.0855	11 22 38.9	14.651
9	1 55 50.77	2.0906	11 37 16.6	14.606
10	1 57 56.36	2.0958	11 51 51.6	14.559
11	2 0 2.26	2.1010	12 6 23.7	14.511
12	2 2 8.48	2.1063	12 20 52.9	14.462
13	2 4 15.02	2.1118	12 35 19.1	14.411
14	2 6 21.89	2.1173	12 49 42.2	14.358
15	2 8 29.09	2.1228	13 4 2.1	14.304
16	2 10 36.62	2.1284	13 18 18.7	14.248
17	2 12 44.50	2.1342	13 32 31.9	14.192
18	2 14 52.72	2.1400	13 46 41.7	14.133
19	2 17 1.30	2.1459	14 0 47.9	14.073
20	2 19 10.23	2.1518	14 14 50.5	14.013
21	2 21 19.52	2.1578	14 28 49.4	13.950
22	2 23 29.17	2.1639	14 42 44.5	13.886
23	2 25 39.19	2.1701	N. 14 56 35.7	13.819
	WEDNESDAY 16.			
0	2 27 49.58	2.1763	N. 15 10 22.8	13.751
1	2 30 0.35	2.1827	15 24 5.8	13.683
2	2 32 11.50	2.1890	15 37 44.7	13.612
3	2 34 23.03	2.1954	15 51 19.2	13.538
4	2 36 34.95	2.2020	16 4 49.3	13.464
5	2 38 47.27	2.2086	16 18 14.9	13.389
6	2 40 59.98	2.2152	16 31 36.0	13.312
7	2 43 13.09	2.2219	16 44 52.4	13.233
8	2 45 26.61	2.2288	16 58 4.0	13.153
9	2 47 40.54	2.2355	17 11 10.7	13.071
10	2 49 54.87	2.2423	17 24 12.5	12.988
11	2 52 9.62	2.2493	17 37 9.2	12.902
12	2 54 24.78	2.2563	17 50 0.7	12.814
13	2 56 40.37	2.2633	18 2 46.9	12.725
14	2 58 56.38	2.2703	18 15 27.7	12.635
15	3 1 12.81	2.2775	18 28 3.1	12.543
16	3 3 29.68	2.2848	18 40 32.8	12.448
17	3 5 46.98	2.2920	18 52 56.9	12.353
18	3 8 4.72	2.2993	19 5 15.2	12.256
19	3 10 22.89	2.3065	19 17 27.6	12.157
20	3 12 41.50	2.3138	19 29 34.0	12.056
21	3 15 0.55	2.3213	19 41 34.3	11.953
22	3 17 20.05	2.3288	19 53 28.4	11.849
23	3 19 40.00	2.3362	20 5 16.2	11.743
24	3 22 0.39	2.3436	N. 20 16 57.5	11.634

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 17.			
	h m s	s	° ′ ″	″
0	3 22 0.39	2.3436	N.20 16 57.5	11.634
1	3 24 21.23	2.3511	20 28 32.3	11.525
2	3 26 42.52	2.3587	20 40 0.5	11.413
3	3 29 4.27	2.3663	20 51 21.9	11.300
4	3 31 26.47	2.3738	21 2 36.5	11.185
5	3 33 49.13	2.3814	21 13 44.1	11.068
6	3 36 12.24	2.3890	21 24 44.7	10.950
7	3 38 35.81	2.3966	21 35 38.1	10.829
8	3 40 59.84	2.4043	21 46 24.2	10.708
9	3 43 24.32	2.4119	21 57 3.0	10.584
10	3 45 49.26	2.4195	22 7 34.3	10.458
11	3 48 14.66	2.4271	22 17 58.0	10.330
12	3 50 40.51	2.4347	22 28 14.0	10.201
13	3 53 6.82	2.4423	22 38 22.1	10.070
14	3 55 33.59	2.4500	22 48 22.3	9.937
15	3 58 0.82	2.4576	22 58 14.5	9.803
16	4 0 28.50	2.4651	23 7 58.6	9.666
17	4 2 56.63	2.4727	23 17 34.4	9.528
18	4 5 25.22	2.4802	23 27 1.9	9.388
19	4 7 54.25	2.4877	23 36 20.9	9.246
20	4 10 23.74	2.4952	23 45 31.4	9.102
21	4 12 53.67	2.5025	23 54 33.2	8.957
22	4 15 24.04	2.5099	24 3 26.2	8.810
23	4 17 54.86	2.5173	N.24 12 10.4	8.662
	FRIDAY 18.			
0	4 20 26.11	2.5245	N.24 20 45.6	8.511
1	4 22 57.80	2.5318	24 29 11.7	8.358
2	4 25 29.93	2.5390	24 37 28.6	8.204
3	4 28 2.48	2.5461	24 45 36.2	8.048
4	4 30 35.46	2.5532	24 53 34.4	7.892
5	4 33 8.86	2.5601	25 1 23.2	7.733
6	4 35 42.67	2.5670	25 9 2.4	7.573
7	4 38 16.90	2.5739	25 16 31.9	7.410
8	4 40 51.54	2.5807	25 23 51.6	7.246
9	4 43 26.58	2.5873	25 31 1.4	7.081
10	4 46 2.02	2.5939	25 38 1.3	6.914
11	4 48 37.85	2.6004	25 44 51.1	6.746
12	4 51 14.07	2.6068	25 51 30.8	6.576
13	4 53 50.67	2.6132	25 58 0.2	6.403
14	4 56 27.65	2.6193	26 4 19.2	6.230
15	4 59 4.99	2.6253	26 10 27.8	6.056
16	5 1 42.69	2.6313	26 16 25.9	5.880
17	5 4 20.75	2.6373	26 22 13.4	5.703
18	5 6 59.16	2.6430	26 27 50.2	5.523
19	5 9 37.91	2.6486	26 33 16.2	5.343
20	5 12 16.99	2.6541	26 38 31.4	5.163
21	5 14 56.40	2.6595	26 43 35.7	4.980
22	5 17 36.13	2.6647	26 48 29.0	4.795
23	5 20 16.16	2.6698	26 53 11.1	4.609
24	5 22 56.50	2.6748	N.26 57 42.1	4.423

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 19.			
	h m s	s	° ′ ″	″
0	5 22 56.50	2.6748	N.26 57 42.1	4.423
1	5 25 37.13	2.6795	27 2 1.9	4.235
2	5 28 18.04	2.6842	27 6 10.3	4.046
3	5 30 59.23	2.6887	27 10 7.4	3.857
4	5 33 40.68	2.6930	27 13 53.1	3.666
5	5 36 22.39	2.6972	27 17 27.3	3.473
6	5 39 4.34	2.7012	27 20 49.9	3.280
7	5 41 46.53	2.7051	27 24 0.9	3.087
8	5 44 28.95	2.7088	27 27 0.3	2.892
9	5 47 11.58	2.7123	27 29 47.9	2.696
10	5 49 54.42	2.7156	27 32 23.8	2.499
11	5 52 37.45	2.7187	27 34 47.8	2.302
12	5 55 20.66	2.7217	27 37 0.0	2.103
13	5 58 4.05	2.7245	27 39 0.2	1.904
14	6 0 47.60	2.7271	27 40 48.5	1.705
15	6 3 31.30	2.7296	27 42 24.8	1.505
16	6 6 15.15	2.7318	27 43 49.1	1.304
17	6 8 59.12	2.7338	27 45 1.3	1.103
18	6 11 43.21	2.7358	27 46 1.5	0.902
19	6 14 27.41	2.7374	27 46 49.5	0.699
20	6 17 11.70	2.7388	27 47 25.4	0.498
21	6 19 56.07	2.7402	27 47 49.2	0.295
22	6 22 40.52	2.7413	27 48 0.8	+0.092
23	6 25 25.03	2.7422	N.27 48 0.2	−0.112
	SUNDAY 20.			
0	6 28 9.58	2.7428	N.27 47 47.4	0.315
1	6 30 54.17	2.7433	27 47 22.4	0.518
2	6 33 38.78	2.7437	27 46 45.2	0.723
3	6 36 23.41	2.7438	27 45 55.7	0.927
4	6 39 8.04	2.7437	27 44 54.0	1.130
5	6 41 52.65	2.7433	27 43 40.1	1.333
6	6 44 37.24	2.7428	27 42 14.0	1.537
7	6 47 21.79	2.7422	27 40 35.7	1.739
8	6 50 6.30	2.7413	27 38 45.3	1.942
9	6 52 50.75	2.7403	27 36 42.7	2.145
10	6 55 35.13	2.7390	27 34 27.9	2.348
11	6 58 19.43	2.7375	27 32 1.0	2.550
12	7 1 3.63	2.7358	27 29 21.9	2.752
13	7 3 47.72	2.7339	27 26 30.8	2.953
14	7 6 31.70	2.7319	27 23 27.6	3.153
15	7 9 15.55	2.7297	27 20 12.4	3.353
16	7 11 59.26	2.7273	27 16 45.2	3.553
17	7 14 42.82	2.7247	27 13 6.0	3.753
18	7 17 26.22	2.7218	27 9 14.9	3.950
19	7 20 9.44	2.7188	27 5 12.0	4.147
20	7 22 52.48	2.7157	27 0 57.3	4.343
21	7 25 35.33	2.7124	26 56 30.8	4.539
22	7 28 17.97	2.7089	26 51 52.6	4.734
23	7 31 0.40	2.7052	26 47 2.7	4.928
24	7 33 42.60	2.7014	N.26 42 1.2	5.121

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 21.			
	h m s	s	° ′ ″	″
0	7 33 42.60	2.7014	N.26 42 1.2	5.121
1	7 36 24.57	2.6974	26 36 48.2	5.313
2	7 39 6.29	2.6932	26 31 23.7	5.503
3	7 41 47.75	2.6888	26 25 47.8	5.693
4	7 44 28.95	2.6844	26 20 0.5	5.882
5	7 47 9.88	2.6798	26 14 2.0	6.068
6	7 49 50.53	2.6751	26 7 52.3	6.254
7	7 52 30.89	2.6702	26 1 31.5	6.439
8	7 55 10.95	2.6651	25 54 59.6	6.623
9	7 57 50.70	2.6599	25 48 16.8	6.804
10	8 0 30.14	2.6546	25 41 23.1	6.985
11	8 3 9.25	2.6491	25 34 18.6	7.165
12	8 5 48.03	2.6435	25 27 3.3	7.343
13	8 8 26.47	2.6378	25 19 37.4	7.519
14	8 11 4.57	2.6320	25 12 1.0	7.693
15	8 13 42.31	2.6260	25 4 14.2	7.867
16	8 16 19.69	2.6200	24 56 17.0	8.038
17	8 18 56.71	2.6138	24 48 9.6	8.208
18	8 21 33.35	2.6076	24 39 52.0	8.377
19	8 24 9.62	2.6013	24 31 24.4	8.543
20	8 26 45.50	2.5948	24 22 46.8	8.709
21	8 29 20.99	2.5883	24 13 59.3	8.873
22	8 31 56.09	2.5816	24 5 2.1	9.034
23	8 34 30.78	2.5748	N.23 55 55.2	9.194
	TUESDAY 22.			
0	8 37 5.07	2.5681	N.23 46 38.8	9.352
1	8 39 38.95	2.5612	23 37 13.0	9.508
2	8 42 12.41	2.5542	23 27 37.9	9.662
3	8 44 45.45	2.5472	23 17 53.5	9.815
4	8 47 18.07	2.5402	23 8 0.1	9.966
5	8 49 50.27	2.5331	22 57 57.6	10.115
6	8 52 22.04	2.5259	22 47 46.3	10.262
7	8 54 53.38	2.5187	22 37 26.2	10.407
8	8 57 24.28	2.5113	22 26 57.5	10.549
9	8 59 54.74	2.5040	22 16 20.3	10.691
10	9 2 24.76	2.4967	22 5 34.6	10.831
11	9 4 54.34	2.4893	21 54 40.6	10.968
12	9 7 23.48	2.4819	21 43 38.4	11.103
13	9 9 52.17	2.4743	21 32 28.2	11.237
14	9 12 20.40	2.4668	21 21 10.0	11.368
15	9 14 48.19	2.4594	21 9 44.0	11.498
16	9 17 15.53	2.4519	20 58 10.3	11.625
17	9 19 42.42	2.4443	20 46 29.0	11.750
18	9 22 8.85	2.4368	20 34 40.3	11.873
19	9 24 34.83	2.4293	20 22 44.3	11.994
20	9 27 0.36	2.4218	20 10 41.0	12.113
21	9 29 25.44	2.4142	19 58 30.7	12.230
22	9 31 50.06	2.4066	19 46 13.4	12.346
23	9 34 14.23	2.3990	19 33 49.2	12.459
24	9 36 37.94	2.3914	N.19 21 18.3	12.570

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 23.			
	h m s	s	° ′ ″	″
0	9 36 37.94	2.3914	N.19 21 18.3	12.570
1	9 39 1.20	2.3839	19 8 40.8	12.679
2	9 41 24.01	2.3764	18 55 56.8	12.786
3	9 43 46.37	2.3689	18 43 6.5	12.891
4	9 46 8.28	2.3614	18 30 9.9	12.994
5	9 48 29.74	2.3539	18 17 7.2	13.095
6	9 50 50.75	2.3464	18 3 58.5	13.194
7	9 53 11.31	2.3390	17 50 43.9	13.291
8	9 55 31.43	2.3317	17 37 23.6	13.386
9	9 57 51.11	2.3243	17 23 57.6	13.479
10	10 0 10.35	2.3170	17 10 26.1	13.570
11	10 2 29.15	2.3097	16 56 49.2	13.658
12	10 4 47.51	2.3024	16 43 7.1	13.745
13	10 7 5.44	2.2953	16 29 19.8	13.830
14	10 9 22.94	2.2881	16 15 27.5	13.913
15	10 11 40.01	2.2810	16 1 30.3	13.994
16	10 13 56.66	2.2739	15 47 28.2	14.073
17	10 16 12.88	2.2668	15 33 21.5	14.150
18	10 18 28.68	2.2598	15 19 10.2	14.225
19	10 20 44.06	2.2529	15 4 54.5	14.298
20	10 22 59.03	2.2461	14 50 34.4	14.370
21	10 25 13.59	2.2393	14 36 10.1	14.439
22	10 27 27.74	2.2325	14 21 41.7	14.507
23	10 29 41.49	2.2258	N.14 7 9.3	14.572
	THURSDAY 24.			
0	10 31 54.83	2.2191	N.13 52 33.1	14.635
1	10 34 7.78	2.2126	13 37 53.1	14.697
2	10 36 20.34	2.2061	13 23 9.4	14.757
3	10 38 32.51	2.1996	13 8 22.2	14.815
4	10 40 44.30	2.1933	12 53 31.6	14.871
5	10 42 55.70	2.1869	12 38 37.7	14.925
6	10 45 6.73	2.1807	12 23 40.6	14.978
7	10 47 17.38	2.1744	12 8 40.3	15.029
8	10 49 27.66	2.1683	11 53 37.1	15.078
9	10 51 37.58	2.1623	11 38 31.0	15.125
10	10 53 47.13	2.1563	11 23 22.1	15.171
11	10 55 56.33	2.1503	11 8 10.5	15.214
12	10 58 5.17	2.1445	10 52 56.4	15.256
13	11 0 13.67	2.1388	10 37 39.8	15.296
14	11 2 21.82	2.1331	10 22 20.9	15.334
15	11 4 29.64	2.1275	10 6 59.7	15.371
16	11 6 37.12	2.1219	9 51 36.4	15.406
17	11 8 44.27	2.1164	9 36 11.0	15.439
18	11 10 51.09	2.1110	9 20 43.7	15.471
19	11 12 57.59	2.1058	9 5 14.5	15.502
20	11 15 3.78	2.1006	8 49 43.5	15.530
21	11 17 9.66	2.0954	8 34 10.9	15.557
22	11 19 15.23	2.0903	8 18 36.7	15.583
23	11 21 20.50	2.0853	8 3 1.0	15.606
24	11 23 25.47	2.0804	N. 7 47 24.0	15.628

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 25.			
	h m s	s	° ′ ″	″
0	11 23 25.47	2.0804	N. 7 47 24.0	15.628
1	11 25 30.15	2.0756	7 31 45.7	15.648
2	11 27 34.54	2.0708	7 16 6.2	15.668
3	11 29 38.65	2.0662	7 0 25.6	15.685
4	11 31 42.48	2.0616	6 44 44.0	15.700
5	11 33 46.04	2.0571	6 29 1.6	15.714
6	11 35 49.33	2.0527	6 13 18.3	15.728
7	11 37 52.36	2.0483	5 57 34.2	15.740
8	11 39 55.13	2.0441	5 41 49.5	15.749
9	11 41 57.65	2.0399	5 26 4.3	15.758
10	11 43 59.92	2.0358	5 10 18.6	15.766
11	11 46 1.94	2.0317	4 54 32.4	15.772
12	11 48 3.72	2.0278	4 38 46.0	15.775
13	11 50 5.27	2.0240	4 22 59.4	15.778
14	11 52 6.60	2.0203	4 7 12.6	15.780
15	11 54 7.70	2.0165	3 51 25.8	15.779
16	11 56 8.58	2.0129	3 35 39.1	15.778
17	11 58 9.25	2.0093	3 19 52.4	15.777
18	12 0 9.70	2.0059	3 4 5.9	15.773
19	12 2 9.95	2.0026	2 48 19.7	15.767
20	12 4 10.01	1.9993	2 32 33.9	15.760
21	12 6 9.87	1.9961	2 16 48.5	15.753
22	12 8 9.54	1.9930	2 1 3.5	15.745
23	12 10 9.03	1.9900	N. 1 45 19.1	15.734
	SATURDAY 26.			
0	12 12 8.34	1.9871	N. 1 29 35.4	15.723
1	12 14 7.48	1.9842	1 13 52.4	15.710
2	12 16 6.44	1.9813	0 58 10.2	15.696
3	12 18 5.24	1.9787	0 42 28.9	15.680
4	12 20 3.88	1.9761	0 26 48.6	15.663
5	12 22 2.37	1.9735	N. 0 11 9.3	15.647
6	12 24 0.70	1.9710	S. 0 4 29.0	15.628
7	12 25 58.89	1.9685	0 20 6.1	15.608
8	12 27 56.94	1.9663	0 35 42.0	15.587
9	12 29 54.85	1.9641	0 51 16.5	15.564
10	12 31 52.63	1.9620	1 6 49.7	15.542
11	12 33 50.29	1.9599	1 22 21.5	15.517
12	12 35 47.82	1.9579	1 37 51.7	15.491
13	12 37 45.24	1.9561	1 53 20.4	15.465
14	12 39 42.55	1.9542	2 8 47.5	15.438
15	12 41 39.75	1.9524	2 24 12.9	15.408
16	12 43 36.84	1.9508	2 39 36.5	15.378
17	12 45 33.84	1.9493	2 54 58.3	15.348
18	12 47 30.75	1.9478	3 10 18.2	15.315
19	12 49 27.57	1.9463	3 25 36.1	15.282
20	12 51 24.30	1.9448	3 40 52.0	15.248
21	12 53 20.95	1.9436	3 56 5.9	15.214
22	12 55 17.53	1.9424	4 11 17.7	15.178
23	12 57 14.04	1.9413	4 26 27.2	15.140
24	12 59 10.49	1.9403	S. 4 41 34.5	15.103

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 27.			
	h m s	s	° ′ ″	″
0	12 59 10.49	1.9403	S. 4 41 34.5	15.103
1	13 1 6.87	1.9393	4 56 39.5	15.063
2	13 3 3.20	1.9384	5 11 42.1	15.023
3	13 4 59.48	1.9376	5 26 42.2	14.982
4	13 6 55.71	1.9368	5 41 39.9	14.940
5	13 8 51.90	1.9362	5 56 35.0	14.898
6	13 10 48.05	1.9355	6 11 27.6	14.854
7	13 12 44.16	1.9349	6 26 17.5	14.808
8	13 14 40.24	1.9345	6 41 4.6	14.763
9	13 16 36.30	1.9342	6 55 49.0	14.716
10	13 18 32.34	1.9338	7 10 30.5	14.668
11	13 20 28.36	1.9335	7 25 9.2	14.620
12	13 22 24.36	1.9333	7 39 44.9	14.571
13	13 24 20.36	1.9333	7 54 17.7	14.521
14	13 26 16.36	1.9333	8 8 47.4	14.469
15	13 28 12.35	1.9333	8 23 14.0	14.418
16	13 30 8.35	1.9333	8 37 37.5	14.365
17	13 32 4.35	1.9335	8 51 57.8	14.311
18	13 34 0.37	1.9338	9 6 14.8	14.257
19	13 35 56.40	1.9340	9 20 28.6	14.202
20	13 37 52.45	1.9344	9 34 39.0	14.145
21	13 39 48.53	1.9348	9 48 46.0	14.088
22	13 41 44.63	1.9353	10 2 49.6	14.031
23	13 43 40.77	1.9359	S. 10 16 49.7	13.972
	MONDAY 28.			
0	13 45 36.94	1.9365	S. 10 30 46.2	13.912
1	13 47 33.15	1.9373	10 44 39.1	13.852
2	13 49 29.41	1.9380	10 58 28.4	13.791
3	13 51 25.71	1.9388	11 12 14.0	13.728
4	13 53 22.06	1.9397	11 25 55.8	13.666
5	13 55 18.47	1.9406	11 39 33.9	13.603
6	13 57 14.93	1.9416	11 53 8.1	13.538
7	13 59 11.46	1.9428	12 6 38.5	13.473
8	14 1 8.06	1.9438	12 20 4.9	13.407
9	14 3 4.72	1.9449	12 33 27.3	13.340
10	14 5 1.45	1.9462	12 46 45.7	13.273
11	14 6 58.26	1.9475	13 0 0.1	13.205
12	14 8 55.15	1.9488	13 13 10.3	13.136
13	14 10 52.12	1.9503	13 26 16.4	13.066
14	14 12 49.18	1.9518	13 39 18.2	12.995
15	14 14 46.33	1.9533	13 52 15.8	12.924
16	14 16 43.57	1.9548	14 5 9.1	12.853
17	14 18 40.91	1.9565	14 17 58.1	12.780
18	14 20 38.35	1.9582	14 30 42.7	12.706
19	14 22 35.89	1.9598	14 43 22.8	12.631
20	14 24 33.53	1.9616	14 55 58.4	12.556
21	14 26 31.28	1.9634	15 8 29.5	12.481
22	14 28 29.14	1.9653	15 20 56.1	12.404
23	14 30 27.12	1.9673	15 33 18.0	12.327
24	14 32 25.22	1.9693	S. 15 45 35.3	12.249

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 29.			
	h m s	s	° ′ ″	″
0	14 32 25.22	1.9693	S. 15 45 35.3	12.249
1	14 34 23.44	1.9713	15 57 47.9	12.170
2	14 36 21.78	1.9734	16 9 55.7	12.091
3	14 38 20.25	1.9755	16 21 58.8	12.011
4	14 40 18.84	1.9777	16 33 57.0	11.930
5	14 42 17.57	1.9799	16 45 50.4	11.848
6	14 44 16.43	1.9822	16 57 38.8	11.766
7	14 46 15.43	1.9845	17 9 22.3	11.683
8	14 48 14.57	1.9868	17 21 0.8	11.599
9	14 50 13.85	1.9892	17 32 34.2	11.515
10	14 52 13.27	1.9916	17 44 2.6	11.430
11	14 54 12.84	1.9941	17 55 25.8	11.344
12	14 56 12.56	1.9966	18 6 43.9	11.258
13	14 58 12.43	1.9992	18 17 56.7	11.170
14	15 0 12.46	2.0018	18 29 4.3	11.083
15	15 2 12.64	2.0043	18 40 6.6	10.994
16	15 4 12.98	2.0070	18 51 3.6	10.905
17	15 6 13.48	2.0097	19 1 55.2	10.814
18	15 8 14.14	2.0123	19 12 41.3	10.723
19	15 10 14.96	2.0151	19 23 22.0	10.633
20	15 12 15.95	2.0179	19 33 57.2	10.541
21	15 14 17.11	2.0207	19 44 26.9	10.448
22	15 16 18.43	2.0234	19 54 51.0	10.354
23	15 18 19.92	2.0263	S. 20 5 9.4	10.260
	WEDNESDAY 30.			
0	15 20 21.59	2.0293	S. 20 15 22.2	10.166
1	15 22 23.43	2.0322	20 25 29.3	10.070
2	15 24 25.45	2.0351	20 35 30.6	9.973
3	15 26 27.65	2.0381	20 45 26.1	9.877
4	15 28 30.02	2.0411	20 55 15.8	9.780
5	15 30 32.57	2.0440	21 4 59.7	9.682
6	15 32 35.30	2.0470	21 14 37.6	9.583
7	15 34 38.21	2.0501	21 24 9.6	9.483
8	15 36 41.31	2.0532	21 33 35.6	9.383
9	15 38 44.59	2.0563	21 42 55.6	9.283
10	15 40 48.06	2.0593	21 52 9.5	9.181
11	15 42 51.71	2.0624	22 1 17.3	9.078
12	15 44 55.55	2.0656	22 10 18.9	8.976
13	15 46 59.58	2.0687	22 19 14.4	8.873
14	15 49 3.79	2.0718	22 28 3.6	8.768
15	15 51 8.19	2.0749	22 36 46.6	8.664
16	15 53 12.78	2.0781	22 45 23.3	8.558
17	15 55 17.56	2.0813	22 53 53.6	8.453
18	15 57 22.53	2.0844	23 2 17.6	8.346
19	15 59 27.69	2.0875	23 10 35.1	8.238
20	16 1 33.03	2.0907	23 18 46.2	8.131
21	16 3 38.57	2.0939	23 26 50.8	8.022
22	16 5 44.30	2.0970	23 34 48.8	7.913
23	16 7 50.21	2.1002	23 42 40.3	7.803
24	16 9 56.32	2.1034	S. 23 50 25.2	7.693

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 31.			
	h m s	s	° ′ ″	″
0	16 9 56.32	2.1034	S. 23 50 25.2	7.693
1	16 12 2.62	2.1065	23 58 3.5	7.583
2	16 14 9.11	2.1097	24 5 35.1	7.470
3	16 16 15.78	2.1128	24 12 59.9	7.358
4	16 18 22.64	2.1159	24 20 18.0	7.245
5	16 20 29.69	2.1191	24 27 29.3	7.132
6	16 22 36.93	2.1222	24 34 33.8	7.018
7	16 24 44.35	2.1253	24 41 31.4	6.903
8	16 26 51.96	2.1284	24 48 22.2	6.788
9	16 28 59.76	2.1315	24 55 6.0	6.672
10	16 31 7.74	2.1345	25 1 42.8	6.556
11	16 33 15.90	2.1375	25 8 12.7	6.439
12	16 35 24.24	2.1406	25 14 35.5	6.321
13	16 37 32.77	2.1436	25 20 51.2	6.203
14	16 39 41.47	2.1465	25 26 59.9	6.085
15	16 41 50.35	2.1495	25 33 1.4	5.965
16	16 43 59.41	2.1524	25 38 55.7	5.845
17	16 46 8.64	2.1553	25 44 42.8	5.725
18	16 48 18.04	2.1581	25 50 22.7	5.605
19	16 50 27.61	2.1611	25 55 55.4	5.483
20	16 52 37.36	2.1639	26 1 20.8	5.362
21	16 54 47.28	2.1667	26 6 38.8	5.239
22	16 56 57.36	2.1693	26 11 49.5	5.117
23	16 59 7.60	2.1720	S. 26 16 52.8	4.993
	FRIDAY, SEPTEMBER 1.			
0	17 1 18.00	2.1747	S. 26 21 48.7	4.869

PHASES OF THE MOON.

		d h m
☽	First Quarter . . . Aug.	1 11 29.4
○	Full Moon	9 14 54.7
☾	Last Quarter	17 0 10.7
●	New Moon	23 16 14.3
☽	First Quarter	31 4 20.7

		d h
☾	Apogee . . . . . Aug.	5 2.4
☾	Perigee	20 22.6

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	84 35 50	3259	86 0 50	3272	87 25 34	3285	88 50 3	3298
	Venus	W.	42 13 51	3174	43 40 31	3185	45 6 58	3195	46 33 13	3205
	Antares	E.	36 6 14	2896	34 33 50	2909	33 1 43	2921	31 29 51	2934
	Fomalhaut	E.	117 48 40	3126	116 21 2	3133	114 53 32	3139	113 26 10	3146
2	Sun	W.	95 48 58	3353	97 12 7	3363	98 35 5	3372	99 57 53	3382
	Venus	W.	53 41 36	3250	55 6 46	3258	56 31 47	3265	57 56 39	3272
	Spica	W.	22 18 10	3020	23 47 58	3025	25 17 41	3030	26 47 17	3034
	Jupiter	W.	9 3 11	3035	10 32 40	3040	12 2 4	3045	13 31 21	3049
	Fomalhaut	E.	106 11 17	3178	104 44 41	3184	103 18 13	3190	101 51 52	3196
3	Sun	W.	106 49 27	3420	108 11 21	3426	109 33 8	3432	110 54 48	3437
	Venus	W.	64 59 7	3300	66 23 18	3305	67 47 23	3309	69 11 23	3313
	Spica	W.	34 13 54	3056	35 42 56	3060	37 11 54	3064	38 40 47	3068
	Jupiter	W.	20 56 16	3075	22 24 55	3080	23 53 29	3084	25 21 57	3088
	Fomalhaut	E.	94 41 50	3224	93 16 9	3228	91 50 33	3232	90 25 2	3237
	α Pegasi	E.	114 31 49	3466	113 10 47	3462	111 49 41	3458	110 28 30	3455
4	Sun	W.	117 41 54	3456	119 3 7	3459	120 24 16	3462	121 45 23	3464
	Venus	W.	76 10 32	3325	77 34 15	3326	78 57 57	3326	80 21 38	3326
	Spica	W.	46 4 19	3080	47 32 53	3081	49 1 25	3082	50 29 56	3082
	Jupiter	W.	32 43 11	3104	34 11 15	3106	35 39 17	3107	37 7 18	3109
	Fomalhaut	E.	83 18 45	3257	81 53 43	3260	80 28 45	3263	79 3 51	3266
	α Pegasi	E.	103 41 45	3141	102 20 15	3439	100 58 43	3437	99 37 8	3435
5	Venus	W.	87 20 8	3322	88 43 54	3320	90 7 42	3318	91 31 33	3315
	Spica	W.	57 52 29	3081	59 21 2	3079	60 49 37	3078	62 18 14	3076
	Jupiter	W.	44 27 9	3109	45 55 8	3108	47 23 8	3106	48 51 10	3104
	Antares	W.	12 1 1	3114	13 28 53	3106	14 56 55	3099	16 25 6	3092
	Fomalhaut	E.	72 0 11	3281	70 35 37	3283	69 11 6	3286	67 46 38	3289
	α Pegasi	E.	92 48 39	3425	91 26 51	3424	90 5 2	3422	88 43 10	3421
6	Venus	W.	98 31 41	3297	99 55 56	3293	101 20 16	3288	102 44 41	3283
	Spica	W.	69 42 3	3061	71 11 1	3057	72 40 3	3053	74 9 10	3048
	Jupiter	W.	56 12 3	3091	57 40 24	3087	59 8 50	3082	60 37 21	3078
	Antares	W.	23 47 50	3066	25 16 41	3061	26 45 39	3056	28 14 43	3050
	Fomalhaut	E.	60 45 12	3306	59 21 7	3310	57 57 7	3314	56 33 12	3319
	α Pegasi	E.	81 53 30	3415	80 31 30	3415	79 9 30	3414	77 47 29	3413
7	Venus	W.	109 48 22	3255	111 13 26	3248	112 38 38	3242	114 3 57	3236
	Spica	W.	81 36 15	3023	83 6 0	3017	84 35 51	3011	86 5 50	3005
	Jupiter	W.	68 1 19	3053	69 30 26	3048	70 59 39	3042	72 29 0	3036
	Antares	W.	35 41 43	3022	37 11 28	3016	38 41 21	3009	40 11 22	3003
	Fomalhaut	E.	49 35 23	3358	48 12 17	3368	46 49 24	3380	45 26 45	3393
	α Pegasi	E.	70 57 28	3418	69 35 31	3420	68 13 37	3423	66 51 46	3426
	α Arietis	E.	112 31 47	3091	111 3 26	3083	109 34 56	3076	108 6 17	3068
	Saturn	E.	124 52 9	3045	123 22 52	3039	121 53 28	3033	120 23 56	3026
8	Spica	W.	93 37 45	2972	95 8 33	2965	96 39 30	2958	98 10 36	2950
	Jupiter	W.	79 57 41	3003	81 27 50	2996	82 58 8	2989	84 28 35	2981
	Antares	W.	47 43 29	2969	49 14 21	2962	50 45 21	2954	52 16 31	2946
	α Pegasi	E.	60 3 43	3454	58 42 28	3463	57 21 23	3474	56 0 29	3485

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	90 14 17	3310	91 38 17	3321	93 2 3	3332	94 25 37	3343
	Venus	W.	47 59 15	3215	49 25 6	3224	50 50 46	3233	52 16 16	3242
	Antares	E.	29 58 15	2946	28 26 54	2958	26 55 48	2969	25 24 56	2980
	Fomalhaut	E.	111 58 56	3152	110 31 50	3158	109 4 51	3165	107 38 0	3172
2	Sun	W.	101 20 30	3391	102 42 57	3399	104 5 15	3406	105 27 25	3413
	Venus	W.	59 21 23	3279	60 45 59	3285	62 10 28	3290	63 34 50	3295
	Spica	W.	28 16 48	3039	29 46 13	3043	31 15 32	3047	32 44 46	3052
	Jupiter	W.	15 0 33	3054	16 29 39	3060	17 58 38	3065	19 27 30	3070
	Fomalhaut	E.	100 25 38	3202	98 59 31	3208	97 33 31	3213	96 7 37	3219
3	Sun	W.	112 16 23	3441	113 37 53	3446	114 59 17	3450	116 20 37	3453
	Venus	W.	70 35 19	3316	71 59 12	3319	73 23 1	3321	74 46 47	3323
	Spica	W.	40 9 36	3071	41 38 21	3073	43 7 3	3076	44 35 42	3078
	Jupiter	W.	26 50 20	3092	28 18 39	3096	29 46 54	3099	31 15 4	3102
	Fomalhaut	E.	88 59 37	3242	87 34 17	3246	86 9 2	3249	84 43 51	3253
	α Pegasi	E.	109 7 16	3452	107 45 58	3449	106 24 37	3446	105 3 12	3444
4	Sun	W.	123 6 28	3465	124 27 31	3466	125 48 33	3467	127 9 34	3466
	Venus	W.	81 45 19	3326	83 9 0	3326	84 32 41	3325	85 56 24	3324
	Spica	W.	51 58 27	3083	53 26 57	3083	54 55 27	3082	56 23 58	3082
	Jupiter	W.	38 35 17	3110	40 3 15	3110	41 31 13	3110	42 59 11	3110
	Fomalhaut	E.	77 39 0	3269	76 14 13	3272	74 49 29	3275	73 24 48	3278
	α Pegasi	E.	98 15 30	3433	96 53 51	3431	95 32 9	3429	94 10 25	3427
5	Venus	W.	92 55 27	3312	94 19 25	3309	95 43 26	3306	97 7 31	3302
	Spica	W.	63 46 53	3073	65 15 35	3070	66 44 21	3068	68 13 10	3065
	Jupiter	W.	50 19 15	3102	51 47 22	3100	53 15 32	3097	54 43 46	3094
	Antares	W.	17 53 25	3086	19 21 52	3081	20 50 26	3076	22 19 5	3071
	Fomalhaut	E.	66 22 14	3292	64 57 53	3295	63 33 35	3298	62 9 21	3302
	α Pegasi	E.	87 21 17	3419	85 59 22	3418	84 37 26	3417	83 15 29	3416
6	Venus	W.	104 9 13	3278	105 33 50	3272	106 58 34	3266	108 23 25	3261
	Spica	W.	75 38 23	3044	77 7 41	3039	78 37 6	3034	80 6 37	3028
	Jupiter	W.	62 5 57	3073	63 34 39	3069	65 3 26	3064	66 32 19	3059
	Antares	W.	29 43 54	3045	31 13 11	3039	32 42 35	3034	34 12 5	3028
	Fomalhaut	E.	55 9 23	3325	53 45 41	3332	52 22 6	3339	50 58 40	3348
	α Pegasi	E.	76 25 27	3414	75 3 26	3415	73 41 26	3415	72 19 26	3416
7	Venus	W.	115 29 23	3230	116 54 57	3223	118 20 39	3216	119 46 29	3209
	Spica	W.	87 35 57	2999	89 6 11	2992	90 36 34	2985	92 7 5	2978
	Jupiter	W.	73 58 28	3030	75 28 4	3023	76 57 48	3016	78 27 40	3009
	Antares	W.	41 41 31	2997	43 11 48	2990	44 42 13	2983	46 12 47	2976
	Fomalhaut	E.	44 4 20	3409	42 42 13	3428	41 20 29	3449	39 59 8	3471
	α Pegasi	E.	65 29 59	3430	64 8 16	3435	62 46 38	3440	61 25 7	3446
	α Arietis	E.	106 37 28	3061	105 8 31	3053	103 39 24	3046	102 10 8	3039
	Saturn	E.	118 54 15	3019	117 24 26	3012	115 54 29	3005	114 24 23	2998
8	Spica	W.	99 41 52	2942	101 13 17	2935	102 44 51	2927	104 16 35	2920
	Jupiter	W.	85 59 11	2973	87 29 57	2966	89 0 52	2958	90 31 57	2951
	Antares	W.	53 47 51	2939	55 19 20	2931	56 50 59	2924	58 22 48	2916
	α Pegasi	E.	54 39 48	3498	53 19 22	3513	51 59 12	3530	50 39 22	3550

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month	Name and Direction of Object		Noon.	P. L. of Diff	IIIh	P. L. of Diff.	VIh	P. L. of Diff.	IXh	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
8	α Arietis	E.	100 40 43	3030	99 11 8	3023	97 41 24	3015	96 11 30	3008
	Saturn	E.	112 54 8	2991	111 23 44	2984	109 53 11	2976	108 22 28	2969
9	Spica	W.	105 48 29	2912	107 20 32	2904	108 52 46	2896	110 25 10	2888
	Jupiter	W.	92 3 11	2943	93 34 35	2935	95 6 9	2927	96 37 53	2919
	Antares	W.	59 54 47	2908	61 26 56	2900	62 59 15	2892	64 31 44	2883
	α Pegasi	E.	49 19 53	3573	48 0 49	3598	46 42 12	3626	45 24 6	3657
	α Arietis	E.	88 39 36	2969	87 8 44	2961	85 37 42	2953	84 6 30	2945
	Saturn	E.	100 46 29	2929	99 14 47	2921	97 42 55	2913	96 10 52	2905
	Aldebaran	E.	119 3 37	2965	117 32 40	2955	116 1 30	2945	114 30 8	2935
10	Jupiter	W.	104 19 10	2878	105 51 57	2869	107 24 55	2861	108 58 4	2853
	Antares	W.	72 16 50	2842	73 50 24	2834	75 24 8	2825	76 58 4	2816
	α Arietis	E.	76 28 3	2907	74 55 52	2900	73 23 33	2892	71 51 4	2884
	Saturn	E.	88 28 1	2863	86 54 54	2854	85 21 37	2845	83 48 8	2837
	Aldebaran	E.	106 50 20	2889	105 17 47	2880	103 45 3	2871	102 12 7	2862
11	Antares	W.	84 50 29	2774	86 25 31	2765	88 0 45	2756	89 36 10	2747
	α Arietis	E.	64 6 21	2851	62 32 59	2844	60 59 28	2838	59 25 49	2832
	Saturn	E.	75 57 59	2795	74 23 24	2786	72 48 38	2778	71 13 41	2769
	Aldebaran	E.	94 24 33	2818	92 50 28	2809	91 16 12	2801	89 41 45	2792
12	Antares	W.	97 36 9	2704	99 12 43	2695	100 49 29	2687	102 26 27	2678
	α Arietis	E.	51 35 49	2807	50 1 30	2804	48 27 7	2801	46 52 40	2798
	Saturn	E.	63 16 5	2727	61 40 1	2718	60 3 45	2710	58 27 18	2701
	Aldebaran	E.	81 46 39	2750	80 11 5	2741	78 35 20	2733	76 59 24	2725
13	Saturn	E.	50 22 16	2660	48 44 43	2652	47 6 59	2644	45 29 4	2636
	Aldebaran	E.	68 57 6	2687	67 20 8	2678	65 42 59	2671	64 5 40	2664
	Pollux	E.	112 43 15	2635	111 5 8	2626	109 26 48	2617	107 48 16	2608
14	Fomalhaut	W.	43 27 18	2965	44 58 15	2953	46 29 52	2904	48 2 6	2876
	Saturn	E.	37 16 51	2599	35 37 54	2592	33 58 48	2586	32 19 33	2580
	Aldebaran	E.	55 56 44	2630	54 18 30	2624	52 40 8	2619	51 1 39	2613
	Pollux	E.	99 32 33	2563	97 52 48	2554	96 12 50	2545	94 32 39	2536
	Sun	E.	127 57 10	2912	126 25 7	2902	124 52 51	2891	123 20 21	2880
15	Fomalhaut	W.	55 51 28	2762	57 26 46	2742	59 2 30	2723	60 38 39	2706
	α Pegasi	W.	38 40 4	3494	40 0 35	3416	41 22 33	3345	42 45 52	3281
	Aldebaran	E.	42 47 31	2593	41 8 27	2591	39 29 20	2591	37 50 13	2591
	Pollux	E.	86 8 37	2490	84 27 10	2481	82 45 31	2472	81 3 38	2462
	Sun	E.	115 34 27	2828	114 0 36	2818	112 26 31	2808	110 52 13	2797
16	Fomalhaut	W.	68 44 56	2629	70 23 13	2615	72 1 48	2601	73 40 42	2588
	α Pegasi	W.	49 59 16	3034	51 28 46	2997	52 59 3	2961	54 30 5	2927
	Pollux	E.	72 30 58	2417	70 47 47	2407	69 4 22	2398	67 20 44	2389
	Sun	E.	102 57 18	2746	101 21 39	2735	99 45 46	2725	98 9 40	2715
17	Fomalhaut	W.	81 59 25	2530	83 39 56	2520	85 20 41	2510	87 1 40	2500
	α Pegasi	W.	62 14 56	2792	63 49 35	2769	65 24 43	2748	67 0 19	2728
	Pollux	E.	58 39 17	2343	56 54 20	2334	55 9 11	2325	53 23 48	2317
	Sun	E.	90 5 45	2666	88 28 19	2656	86 50 40	2646	85 12 48	2637

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month	Name and Direction of Object		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
8	α Arietis	E.	94 41 27	3000	93 11 14	2992	91 40 51	2984	90 10 18	2977
	SATURN	E.	106 51 36	2961	105 20 34	2953	103 49 23	2945	102 18 1	2937
9	Spica	W.	111 57 44	2880	113 30 28	2872	115 3 23	2864	116 36 28	2855
	JUPITER	W.	98 9 48	2911	99 41 53	2903	101 14 8	2895	102 46 34	2887
	Antares	W.	66 4 24	2876	67 37 14	2867	69 10 15	2859	70 43 27	2850
	α Pegasi	E.	44 6 33	3693	42 49 39	3736	41 33 30	3784	40 18 11	3836
	α Arietis	E.	82 35 8	2937	81 3 36	2930	79 31 55	2922	78 0 4	2914
	SATURN	E.	94 38 39	2897	93 6 16	2888	91 33 42	2880	90 0 57	2871
	Aldebaran	E.	112 58 34	2926	111 26 48	2917	109 54 51	2907	108 22 41	2898
10	JUPITER	W.	110 31 23	2845	112 4 53	2836	113 38 34	2827	115 12 26	2818
	Antares	W.	78 32 11	2808	80 6 29	2800	81 40 57	2791	83 15 37	2782
	α Arietis	E.	70 18 25	2877	68 45 37	2871	67 12 41	2864	65 39 35	2857
	SATURN	E.	82 14 28	2829	80 40 37	2820	79 6 36	2811	77 32 23	2803
	Aldebaran	E.	100 38 59	2853	99 5 40	2844	97 32 9	2835	95 58 27	2826
11	Antares	W.	91 11 47	2739	92 47 35	2730	94 23 35	2722	95 59 46	2713
	α Arietis	E.	57 52 3	2826	56 18 9	2821	54 44 9	2816	53 10 2	2811
	SATURN	E.	69 38 32	2760	68 3 12	2752	66 27 41	2744	64 51 59	2735
	Aldebaran	E.	88 7 6	2783	86 32 16	2775	84 57 15	2766	83 22 2	2758
12	Antares	W.	104 3 36	2669	105 40 57	2660	107 18 30	2652	108 56 15	2643
	α Arietis	E.	45 18 10	2796	43 43 37	2795	42 9 4	2795	40 34 30	2795
	SATURN	E.	56 50 40	2693	55 13 51	2684	53 36 50	2676	51 59 38	2669
	Aldebaran	E.	75 23 17	2717	73 47 0	2709	72 10 33	2701	70 33 55	2693
13	SATURN	E.	43 50 58	2629	42 12 42	2621	40 34 15	2613	38 55 38	2606
	Aldebaran	E.	62 28 11	2657	60 50 33	2650	59 12 46	2643	57 34 49	2637
	Pollux	E.	106 9 32	2599	104 30 36	2590	102 51 27	2581	101 12 6	2572
14	Fomalhaut	W.	49 34 56	2850	51 8 19	2826	52 42 13	2804	54 16 36	2782
	SATURN	E.	30 40 10	2574	29 0 40	2569	27 21 3	2565	25 41 20	2561
	Aldebaran	E.	49 23 2	2608	47 44 18	2604	46 5 28	2600	44 26 32	2596
	Pollux	E.	92 52 16	2527	91 11 40	2518	89 30 52	2509	87 49 51	2499
	SUN	E.	121 47 37	2870	120 14 40	2859	118 41 29	2849	117 8 5	2838
15	Fomalhaut	W.	62 15 11	2689	63 52 6	2673	65 29 22	2657	67 6 59	2643
	α Pegasi	W.	44 10 26	3223	45 36 8	3170	47 2 53	3121	48 30 37	3076
	Aldebaran	E.	36 11 6	2593	34 32 2	2597	32 53 3	2602	31 14 11	2609
	Pollux	E.	79 21 32	2453	77 39 13	2444	75 56 42	2435	74 13 57	2426
	SUN	E.	109 17 41	2787	107 42 56	2776	106 7 57	2766	104 32 44	2756
16	Fomalhaut	W.	75 19 54	2576	76 59 23	2564	78 39 8	2552	80 19 9	2541
	α Pegasi	W.	56 1 49	2897	57 34 12	2868	59 7 12	2840	60 40 48	2815
	Pollux	E.	65 36 53	2380	63 52 49	2370	62 8 31	2361	60 24 0	2352
	SUN	E.	96 33 20	2705	94 56 46	2695	93 19 59	2685	91 42 59	2675
17	Fomalhaut	W.	88 42 53	2491	90 24 18	2482	92 5 56	2474	93 47 45	2467
	α Pegasi	W.	68 36 22	2710	70 12 49	2692	71 49 40	2675	73 26 54	2660
	Pollux	E.	51 38 13	2308	49 52 25	2300	48 6 25	2291	46 20 13	2283
	SUN	E.	83 34 43	2627	81 56 25	2618	80 17 55	2609	78 39 12	2600

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
18	Fomalhaut	W.	95 29 44	2460	97 11 53	2453	98 54 12	2447	100 36 40	2442
	α Pegasi	W.	75 4 28	2646	76 42 21	2632	78 20 33	2619	79 59 2	2607
	α Arietis	W.	31 35 41	2494	33 17 2	2467	34 59 2	2442	36 41 37	2419
	SATURN	W.	18 9 25	2367	19 53 47	2348	21 38 37	2329	23 23 54	2313
	Pollux	E.	44 33 48	2275	42 47 12	2267	41 0 24	2260	39 13 25	2252
	SUN	E.	77 0 17	2591	75 21 10	2583	73 41 52	2574	72 2 22	2566
19	Fomalhaut	W.	109 10 36	2424	110 53 36	2423	112 36 38	2423	114 19 41	2424
	α Pegasi	W.	88 15 6	2562	89 54 54	2555	91 34 51	2549	93 14 56	2545
	α Arietis	W.	45 21 48	2332	47 7 1	2319	48 52 33	2307	50 38 23	2295
	SATURN	W.	32 15 41	2251	34 2 53	2242	35 50 19	2233	37 37 58	2225
	Pollux	E.	30 15 53	2220	28 27 55	2214	26 39 49	2209	24 51 35	2205
	SUN	E.	63 42 12	2530	62 1 40	2524	60 21 0	2518	58 40 11	2512
20	α Pegasi	W.	101 36 26	2537	103 16 48	2539	104 57 7	2542	106 37 22	2547
	α Arietis	W.	59 31 16	2251	61 18 28	2245	63 5 48	2239	64 53 18	2233
	SATURN	W.	46 38 53	2193	48 27 31	2188	50 16 15	2184	52 5 6	2180
	SUN	E.	50 14 25	2491	48 32 59	2488	46 51 29	2486	45 9 56	2485
21	α Arietis	W.	73 52 22	2218	75 40 23	2216	77 28 26	2216	79 16 30	2216
	SATURN	W.	61 10 30	2170	62 59 43	2169	64 48 57	2169	66 38 11	2170
	SUN	E.	36 42 0	2488	35 0 30	2491	33 19 4	2495	31 37 44	2501
25	SUN	W.	17 43 25	2843	19 16 57	2841	20 50 32	2842	22 24 7	2844
	Antares	E.	80 19 41	2394	78 35 57	2409	76 52 35	2424	75 9 34	2439
	α Aquilæ	E.	123 30 52	3693	122 13 58	3663	120 56 32	3635	119 38 36	3610
26	SUN	W.	30 10 4	2890	31 42 36	2903	33 14 51	2917	34 46 49	2931
	Antares	E.	66 39 52	2517	64 59 2	2533	63 18 35	2549	61 38 29	2565
	α Aquilæ	E.	113 3 1	3528	111 43 8	3521	110 23 7	3516	109 3 0	3513
27	SUN	W.	42 22 0	3007	43 52 4	3023	45 21 49	3039	46 51 14	3055
	Antares	E.	53 23 36	2646	51 45 44	2663	50 8 14	2679	48 31 6	2695
	α Aquilæ	E.	102 22 14	3523	101 2 15	3529	99 42 23	3536	98 22 39	3545
28	SUN	W.	54 13 25	3133	55 40 54	3148	57 8 5	3163	58 34 58	3178
	Antares	E.	40 30 41	2772	38 55 37	2788	37 20 54	2803	35 46 30	2818
	α Aquilæ	E.	91 46 49	3605	90 28 20	3619	89 10 6	3635	87 52 9	3651
29	SUN	W.	65 44 57	3250	67 10 7	3263	68 35 1	3276	69 59 40	3288
	Antares	E.	27 59 11	2888	26 26 37	2901	24 54 20	2914	23 22 20	2927
	α Aquilæ	E.	81 27 0	3744	80 10 58	3764	78 55 18	3785	77 40 0	3808
	Fomalhaut	E.	110 1 58	3091	108 33 37	3100	107 5 28	3109	105 37 29	3118
30	SUN	W.	76 59 28	3345	78 22 47	3355	79 45 55	3364	81 8 52	3373
	α Aquilæ	E.	71 29 35	3932	70 16 48	3960	69 4 28	3989	67 52 38	4020
	Fomalhaut	E.	98 20 13	3160	96 53 16	3168	95 26 29	3177	93 59 52	3185
31	SUN	W.	88 1 11	3412	89 23 13	3418	90 45 9	3423	92 6 59	3429
	α Aquilæ	E.	62 1 21	4194	60 52 49	4234	59 44 55	4277	58 37 41	4322
	Fomalhaut	E.	86 49 1	3220	85 23 16	3226	83 57 38	3233	82 32 8	3239
	α Pegasi	E.	107 12 33	3415	105 50 34	3415	104 28 35	3416	103 6 37	3416

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
18	Fomalhaut	W.	102 19 15	2437	104 1 57	2433	105 44 46	2429	107 27 39	2426
	α Pegasi	W.	81 37 48	2596	83 16 48	2586	84 56 2	2577	86 35 29	2569
	α Arietis	W.	38 24 45	2398	40 8 22	2379	41 52 27	2362	43 36 56	2346
	SATURN	W.	25 9 35	2298	26 55 38	2284	28 42 2	2272	30 28 44	2261
	Pollux	E.	37 26 15	2245	35 38 54	2238	33 51 23	2232	32 3 42	2226
	SUN	E.	70 22 41	2559	68 42 49	2551	67 2 47	2544	65 22 34	2537
19	Fomalhaut	W.	116 2 42	2426	117 45 41	2429	119 28 35	2433	121 11 24	2438
	α Pegasi	W.	94 55 7	2541	96 35 23	2539	98 15 42	2537	99 56 4	2537
	α Arietis	W.	52 24 30	2285	54 10 52	2276	55 57 27	2267	57 44 15	2258
	SATURN	W.	39 25 49	2218	41 13 50	2211	43 2 2	2204	44 50 23	2198
	Pollux	E.	23 3 14	2201	21 14 48	2199	19 26 19	2197	17 37 47	2196
	SUN	E.	56 59 15	2507	55 18 12	2502	53 37 2	2498	51 55 46	2494
20	α Pegasi	W.	108 17 30	2553	109 57 30	2559	111 37 21	2568	113 17 0	2579
	α Arietis	W.	66 40 56	2229	68 28 40	2225	70 16 30	2222	72 4 24	2220
	SATURN	W.	53 54 3	2177	55 43 5	2175	57 32 10	2173	59 21 19	2171
	SUN	E.	43 28 21	2484	41 46 45	2483	40 5 8	2484	38 23 33	2486
21	α Arietis	W.	81 4 34	2217	82 52 37	2218	84 40 38	2220	86 28 36	2222
	SATURN	W.	68 27 24	2171	70 16 35	2172	72 5 45	2174	73 54 52	2177
	SUN	E.	29 56 33	2509	28 15 32	2517	26 34 43	2527	24 54 8	2540
25	SUN	W.	23 57 38	2849	25 31 2	2857	27 4 16	2867	28 37 17	2878
	Antares	E.	73 26 54	2454	71 44 36	2469	70 2 39	2485	68 21 4	2501
	α Aquilæ	E.	118 20 12	3586	117 1 22	3566	115 42 10	3551	114 22 42	3539
26	SUN	W.	36 18 29	2946	37 49 50	2961	39 20 53	2976	40 51 36	2991
	Antares	E.	59 58 46	2581	58 19 25	2597	56 40 27	2613	55 1 50	2630
	α Aquilæ	E.	107 42 50	3512	106 22 39	3512	105 2 28	3514	103 42 19	3518
27	SUN	W.	48 20 19	3071	49 49 4	3087	51 17 30	3102	52 45 37	3118
	Antares	E.	46 54 19	2711	45 17 53	2727	43 41 49	2742	42 6 5	2757
	α Aquilæ	E.	97 3 5	3555	95 43 42	3566	94 24 31	3578	93 5 33	3591
28	SUN	W.	60 1 32	3193	61 27 49	3208	62 53 48	3222	64 19 31	3236
	Antares	E.	34 12 25	2832	32 38 39	2847	31 5 12	2861	29 32 3	2874
	α Aquilæ	E.	86 34 29	3667	85 17 7	3685	84 0 5	3704	82 43 22	3724
29	SUN	W.	71 24 5	3300	72 48 16	3312	74 12 13	3324	75 35 57	3335
	Antares	E.	21 50 36	2941	20 19 9	2954	18 47 59	2967	17 17 5	2979
	α Aquilæ	E.	76 25 5	3831	75 10 35	3856	73 56 30	3880	72 42 50	3905
	Fomalhaut	E.	104 9 41	3127	102 42 4	3135	101 14 37	3143	99 47 20	3152
30	SUN	W.	82 31 39	3382	83 54 16	3391	85 16 43	3399	86 39 1	3406
	α Aquilæ	E.	66 41 18	4051	65 30 29	4084	64 20 12	4119	63 10 29	4156
	Fomalhaut	E.	92 33 24	3193	91 7 6	3199	89 40 56	3206	88 14 54	3214
31	SUN	W.	93 28 43	3434	94 50 21	3438	96 11 55	3441	97 33 25	3444
	α Aquilæ	E.	57 31 9	4369	56 25 20	4480	55 20 17	4474	54 16 2	4531
	Fomalhaut	E.	81 6 45	3245	79 41 29	3251	78 16 20	3256	76 51 17	3261
	α Pegasi	E.	101 44 39	3416	100 22 41	3416	99 0 43	3417	97 38 47	3418

AT GREENWICH APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Semi-diameter.	Sidereal Time of Semi-diameter Passing Meridian.	Equation of Time, to be Added to / Subtracted from Apparent Time.	Diff. for 1 Hour.
		h m s	s	° ′ ″	″	′ ″	s	m s	s
Frid.	1	10 38 21.69	+9.080	N. 8 36 11.0	−54.14	15 52.87	64.41	0 13.95	0.774
Sat.	2	10 41 59.45	9.067	8 14 27.5	54.48	15 53.10	64.37	0 4.79	0.788
SUN.	3	10 45 36.90	9.054	7 52 36.2	54.80	15 53.34	64.32	0 23.85	0.800
Mon.	4	10 49 14.05	+9.042	7 30 37.4	−55.11	15 53.58	64.28	0 43.20	0.812
Tues.	5	10 52 50.93	9.031	7 8 31.4	55.40	15 53.83	64.24	1 2.82	0.823
Wed.	6	10 56 27.56	9.021	6 46 18.5	55.68	15 54.08	64.21	1 22.69	0.833
Thur.	7	11 0 3.96	+9.012	6 23 58.9	−55.95	15 54.32	64.18	1 42.79	0.842
Frid.	8	11 3 40.15	9.004	6 1 33.1	56.20	15 54.56	64.15	2 3.09	0.850
Sat.	9	11 7 16.16	8.997	5 39 1.3	56.44	15 54.80	64.12	2 23.59	0.858
SUN.	10	11 10 52.00	+8.990	5 16 23.8	−56.67	15 55.04	64.10	2 44.25	0.864
Mon.	11	11 14 27.69	8.985	4 53 41.0	56.89	15 55.28	64.08	3 5.05	0.870
Tues.	12	11 18 3.26	8.980	4 30 53.1	57.10	15 55.53	64.06	3 25.97	0.874
Wed.	13	11 21 38.73	+8.976	4 8 0.4	−57.29	15 55.78	64.04	3 46.99	0.878
Thur.	14	11 25 14.13	8.974	3 45 3.2	57.47	15 56.04	64.03	4 8.09	0.881
Frid.	15	11 28 49.47	8.972	3 22 1.8	57.64	15 56.30	64.02	4 29.25	0.883
Sat.	16	11 32 24.77	+8.970	2 58 56.6	−57.79	15 56.55	64.02	4 50.44	0.884
SUN.	17	11 36 0.06	8.970	2 35 47.8	57.93	15 56.80	64.01	5 11.65	0.884
Mon.	18	11 39 35.35	8.971	2 12 35.9	58.06	15 57.05	64.01	5 32.86	0.883
Tues.	19	11 43 10.66	+8.972	1 49 21.1	−58.17	15 57.31	64.01	5 54.04	0.882
Wed.	20	11 46 46.01	8.974	1 26 3.8	58.27	15 57.58	64.02	6 15.18	0.880
Thur.	21	11 50 21.42	8.977	1 2 44.4	58.35	15 57.84	64.03	6 36.27	0.878
Frid.	22	11 53 56.90	+8.980	0 39 23.2	−58.41	15 58.10	64.04	6 57.29	0.874
Sat.	23	11 57 32.46	8.984	N. 0 16 0.6	58.46	15 58.36	64.05	7 18.23	0.870
SUN.	24	12 1 8.12	8.988	S. 0 7 23.0	58.50	15 58.63	64.07	7 39.06	0.866
Mon.	25	12 4 43.90	+8.994	0 30 47.2	−58.52	15 58.91	64.09	7 59.77	0.860
Tues.	26	12 8 19.82	9.000	0 54 11.7	58.52	15 59.18	64.11	8 20.34	0.854
Wed.	27	12 11 55.91	9.007	1 17 36.1	58.51	15 59.46	64.14	8 40.76	0.847
Thur.	28	12 15 32.18	+9.015	1 41 0.0	−58.48	15 59.74	64.17	9 1.00	0.839
Frid.	29	12 19 8.64	9.024	2 4 23.2	58.44	16 0.02	64.20	9 21.04	0.831
Sat.	30	12 22 45.31	9.033	2 27 45.2	58.39	16 0.30	64.24	9 40.86	0.821
SUN.	31	12 26 22.22	+9.043	S. 2 51 5.6	−58.32	16 0.58	64.28	10 0.45	0.811

NOTE.—The mean time of semidiameter passing the meridian may be found by subtracting 0s.18 from the sidereal time. The sign − prefixed to the hourly change of declination indicates that north declinations are decreasing or south declinations are increasing.

AT GREENWICH MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Equation of Time, to be Subtracted from / Added to Mean Time.	Diff. for 1 Hour.	Sidereal Time, or Right Ascension of Mean Sun.
		h m s	s	° ′ ″	″	m s	s	h m s
Frid.	1	10 38 21.65	+9.082	N. 8 36 11.2	−54.16	0 13.95	+0.774	10 38 7.70
Sat.	2	10 41 59.46	9.069	8 14 27.5	54.49	0 4.80	0.788	10 42 4.26
SUN.	3	10 45 36.95	9.056	7 52 35.9	54.81	0 23.86	0.800	10 46 0.81
Mon.	4	10 49 14.15	+9.044	7 30 36.8	−55.12	0 43.21	+0.812	10 49 57.36
Tues.	5	10 52 51.08	9.033	7 8 30.4	55.41	1 2.83	0.823	10 53 53.92
Wed.	6	10 56 27.77	9.023	6 46 17.1	55.69	1 22.70	0.833	10 57 50.47
Thur.	7	11 0 4.22	+9.014	6 23 57.3	−55.96	1 42.81	+0.842	11 1 47.03
Frid.	8	11 3 40.46	9.006	6 1 31.2	56.22	2 3.12	0.850	11 5 43.58
Sat.	9	11 7 16.51	8.999	5 38 59.1	56.46	2 23.62	0.858	11 9 40.13
SUN.	10	11 10 52.40	+8.992	5 16 21.3	−56.69	2 44.29	+0.864	11 13 36.69
Mon.	11	11 14 28.15	8.987	4 53 38.1	56.91	3 5.10	0.870	11 17 33.24
Tues.	12	11 18 3.77	8.982	4 30 49.9	57.11	3 26.03	0.874	11 21 29.80
Wed.	13	11 21 39.30	+8.979	4 7 56.9	−57.31	3 47.05	+0.878	11 25 26.35
Thur.	14	11 25 14.75	8.976	3 44 59.3	57.49	4 8.15	0.881	11 29 22.90
Frid.	15	11 28 50.14	8.974	3 21 57.5	57.66	4 29.31	0.883	11 33 19.46
Sat.	16	11 32 25.50	+8.973	2 58 51.9	−57.81	4 50.51	+0.884	11 37 16.01
SUN.	17	11 36 0.84	8.972	2 35 42.8	57.95	5 11.73	0.884	11 41 12.56
Mon.	18	11 39 36.18	8.973	2 12 30.5	58.07	5 32.94	0.883	11 45 9.12
Tues.	19	11 43 11.54	+8.974	1 49 15.4	−58.18	5 54.13	+0.882	11 49 5.67
Wed.	20	11 46 46.95	8.976	1 25 57.8	58.28	6 15.28	0.880	11 53 2.22
Thur.	21	11 50 22.41	8.979	1 2 38.0	58.36	6 36.37	0.878	11 56 58.78
Frid.	22	11 53 57.94	+8.982	0 39 16.4	−58.43	6 57.39	+0.874	12 0 55.33
Sat.	23	11 57 33.55	8.986	N. 0 15 53.5	58.48	7 18.33	0.870	12 4 51.88
SUN.	24	12 1 9.26	8.991	S. 0 7 30.4	58.51	7 39.17	0.866	12 8 48.44
Mon.	25	12 4 45.10	+8.996	0 30 55.0	−58.53	7 59.89	+0.860	12 12 44.99
Tues.	26	12 8 21.08	9.002	0 54 19.8	58.53	8 20.46	0.854	12 16 41.54
Wed.	27	12 11 57.22	9.009	1 17 44.5	58.52	8 40.88	0.847	12 20 38.10
Thur.	28	12 15 33.53	+9.017	1 41 8.8	−58.50	9 1.12	+0.839	12 24 34.65
Frid.	29	12 19 10.04	9.026	2 4 32.3	58.46	9 21.16	0.831	12 28 31.21
Sat.	30	12 22 46.77	9.035	2 27 54.6	58.40	9 40.99	0.821	12 32 27.76
SUN.	31	12 26 23.73	+9.045	S. 2 51 15.4	−58.33	10 0.58	+0.811	12 36 24.31

NOTE.—The semidiameter for mean noon may be assumed the same as that for apparent noon.
The sign − prefixed to the hourly change of declination indicates that north declinations are decreasing or south declinations are increasing.

Diff. for 1 Hour, + 9ˢ.8565. (Table III.)

AT GREENWICH MEAN NOON.

Day of the Month.	Day of the Year.	THE SUN'S TRUE LONGITUDE. λ	λ′	Diff. for 1 Hour.	LATITUDE.	Logarithm of the Radius Vector of the Earth.	Diff. for 1 Hour.	Mean Time of Sidereal Noon.
		° ′ ″	′ ″	″	″			h m s
1	244	157 55 41.7	55 16.9	145.18	− 0.24	0.003 9132	− 44.2	13 19 40.93
2	245	158 53 46.6	53 21.7	145.24	0.31	0.003 8066	44.6	13 15 45.02
3	246	159 51 53.0	51 27.9	145.30	0.36	0.003 6990	45.0	13 11 49.11
4	247	160 50 0.8	49 35.6	145.36	− 0.40	0.003 5905	− 45.3	13 7 53.21
5	248	161 48 10.2	47 44.9	145.42	0.40	0.003 4813	45.6	13 3 57.30
6	249	162 46 21.1	45 55.7	145.49	0.38	0.003 3715	45.9	13 0 1.39
7	250	163 44 33.6	44 8.1	145.56	− 0.33	0.003 2611	− 46.1	12 56 5.48
8	251	164 42 47.9	42 22.2	145.63	0.25	0.003 1503	46.2	12 52 9.57
9	252	165 41 3.9	40 38.1	145.71	0.14	0.003 0391	46.4	12 48 13.67
10	253	166 39 21.8	38 55.9	145.79	− 0.02	0.002 9276	− 46.6	12 44 17.76
11	254	167 37 41.6	37 15.6	145.87	+ 0.11	0.002 8157	46.7	12 40 21.85
12	255	168 36 3.5	35 37.4	145.95	0.25	0.002 7034	46.9	12 36 25.94
13	256	169 34 27.4	34 1.2	146.04	+ 0.38	0.002 5906	− 47.1	12 32 30.04
14	257	170 32 53.4	32 27.1	146.13	0.52	0.002 4773	47.3	12 28 34.13
15	258	171 31 21.6	30 55.2	146.22	0.63	0.002 3635	47.6	12 24 38.22
16	259	172 29 52.0	29 25.5	146.31	+ 0.70	0.002 2490	− 47.9	12 20 42.31
17	260	173 28 24.7	27 58.0	146.41	0.75	0.002 1336	48.3	12 16 46.40
18	261	174 26 59.6	26 32.8	146.50	0.79	0.002 0172	48.7	12 12 50.50
19	262	175 25 36.6	25 9.7	146.59	+ 0.77	0.001 8998	− 49.1	12 8 54.59
20	263	176 24 15.8	23 48.7	146.68	0.72	0.001 7813	49.6	12 4 58.68
21	264	177 22 57.0	22 29.9	146.76	0.66	0.001 6616	50.1	12 1 2.77
22	265	178 21 40.3	21 13.1	146.85	+ 0.55	0.001 5408	− 50.6	11 57 6.87
23	266	179 20 25.6	19 58.3	146.93	0.44	0.001 4188	51.1	11 53 10.96
24	267	180 19 12.8	18 45.4	147.01	0.31	0.001 2958	51.5	11 49 15.05
25	268	181 18 1.9	17 34.4	147.08	+ 0.18	0.001 1717	− 51.9	11 45 19.14
26	269	182 16 52.9	16 25.3	147.16	+ 0.06	0.001 0467	52.2	11 41 23.24
27	270	183 15 45.6	15 17.9	147.23	− 0.05	0.000 9210	52.5	11 37 27.33
28	271	184 14 40.1	14 12.3	147.31	− 0.15	0.000 7947	− 52.7	11 33 31.42
29	272	185 13 36.4	13 8.5	147.38	0.23	0.000 6678	52.9	11 29 35.51
30	273	186 12 34.5	12 6.5	147.46	0.30	0.000 5406	53.0	11 25 39.60
31	274	187 11 34.4	11 6.2	147.53	− 0.32	0.000 4132	− 53.1	11 21 43.70

NOTE.—The longitudes in the column λ are referred to the true equinox of their own date, while those in the column λ′ are referred to the mean equinox of the beginning of the Besselian fictitious year.

Diff. for 1 Hour, −9ˢ.8296. (Table II.)

GREENWICH MEAN TIME.

THE MOON'S

Day of the Month.	SEMIDIAMETER. Noon.	SEMIDIAMETER. Midnight.	HORIZONTAL PARALLAX. Noon.	Diff. for 1 Hour.	HORIZONTAL PARALLAX. Midnight.	Diff. for 1 Hour.	UPPER TRANSIT. Meridian of Greenwich.	Diff. for 1 Hour.	AGE. Noon.
	′ ″	′ ″	° ′ ″	″	° ′ ″	″	h m	m	d
1	14 48.8	14 48.1	54 16.2	− 0.34	54 13.4	− 0.13	6 36.5	2.10	8.3
2	14 48.0	14 48.6	54 13.1	+ 0.08	54 15.3	+ 0.28	7 27.5	2.14	9.3
3	14 49.8	14 51.7	54 19.9	0.47	54 26.6	0.65	8 19.1	2.15	10.3
4	14 54.1	14 57.0	54 35.4	+ 0.81	54 46.1	+ 0.96	9 10.1	2.11	11.3
5	15 0.3	15 4.0	54 58.4	1.08	55 12.0	1.18	9 59.9	2.03	12.3
6	15 8.1	15 12.4	55 26.8	1.27	55 42.5	1.34	10 47.8	1.96	13.3
7	15 16.8	15 21.4	55 58.9	+ 1.38	56 15.6	+ 1.40	11 33.9	1.89	14.3
8	15 26.0	15 30.5	56 32.4	1.40	56 49.1	1.37	12 18.9	1.85	15.3
9	15 34.9	15 39.2	57 5.4	1.33	57 21.1	1.28	13 3.4	1.86	16.3
10	15 43.3	15 47.2	57 36.1	+ 1.22	57 50.3	+ 1.15	13 48.6	1.91	17.3
11	15 50.8	15 54.1	58 3.6	1.07	58 15.9	0.98	14 35.6	2.02	18.3
12	15 57.2	16 0.0	58 27.2	0.89	58 37.4	0.80	15 25.7	2.16	19.3
13	16 2.5	16 4.7	58 46.6	+ 0.72	58 54.7	+ 0.63	16 19.8	2.34	20.3
14	16 6.7	16 8.3	59 1.8	0.55	59 7.9	0.46	17 18.1	2.51	21.3
15	16 9.7	16 10.7	59 12.9	0.37	59 16.7	0.27	18 19.8	2.61	22.3
16	16 11.4	16 11.8	59 19.4	+ 0.17	59 20.8	+ 0.06	19 22.7	2.60	23.3
17	16 11.8	16 11.4	59 20.8	− 0.06	59 19.3	− 0.20	20 24.2	2.50	24.3
18	16 10.6	16 9.2	59 16.1	0.34	59 11.2	0.49	21 22.2	2.33	25.3
19	16 7.4	16 5.0	59 4.5	− 0.64	58 55.9	− 0.79	22 16.0	2.15	26.3
20	16 2.2	15 58.9	58 45.5	0.95	58 33.2	1.10	23 5.7	2.00	27.3
21	15 55.0	15 50.7	58 19.1	1.24	58 3.4	1.36	23 52.4	1.90	28.3
22	15 46.1	15 41.2	57 46.4	− 1.47	57 28.2	− 1.55	♁	. .	29.3
23	15 36.0	15 30.7	57 9.2	1.60	56 49.7	1.63	0 37.3	1.84	0.9
24	15 25.3	15 20.0	56 30.0	1.63	56 10.5	1.60	1 21.4	1.84	1.9
25	15 14.8	15 9.9	55 51.6	− 1.54	55 33.5	− 1.45	2 5.9	1.87	2.9
26	15 5.4	15 1.2	55 16.7	1.33	55 1.5	1.20	2 51.5	1.94	3.9
27	14 57.5	14 54.4	54 48.0	1.04	54 36.5	0.87	3 38.8	2.01	4.9
28	14 51.8	14 49.9	54 27.2	− 0.68	54 20.3	− 0.47	4 28.0	2.09	5.9
29	14 48.7	14 48.2	54 15.9	− 0.26	54 14.0	− 0.05	5 18.7	2.13	6.9
30	14 48.4	14 49.4	54 14.8	+ 0.17	54 18.2	+ 0.39	6 10.1	2.14	7.9
31	14 51.0	14 53.3	54 24.2	+ 0.60	54 32.7	+ 0.81	7 1.3	2.11	8.9

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 1.			
	h m s	s	° ′ ″	″
0	17 1 18.00	2.1747	S. 26 21 48.7	4.869
1	17 3 28.56	2.1773	26 26 37.1	4.745
2	17 5 39.28	2.1800	26 31 18.1	4.620
3	17 7 50.16	2.1826	26 35 51.5	4.494
4	17 10 1.19	2.1851	26 40 17.4	4.368
5	17 12 12.37	2.1876	26 44 35.7	4.243
6	17 14 23.70	2.1900	26 48 46.5	4.117
7	17 16 35.17	2.1923	26 52 49.7	3.989
8	17 18 46.78	2.1947	26 56 45.2	3.862
9	17 20 58.53	2.1970	27 0 33.1	3.734
10	17 23 10.42	2.1993	27 4 13.3	3.605
11	17 25 22.44	2.2015	27 7 45.7	3.476
12	17 27 34.60	2.2037	27 11 10.4	3.347
13	17 29 46.88	2.2057	27 14 27.3	3.218
14	17 31 59.28	2.2078	27 17 36.5	3.088
15	17 34 11.81	2.2098	27 20 37.9	2.958
16	17 36 24.46	2.2118	27 23 31.4	2.827
17	17 38 37.22	2.2136	27 26 17.1	2.696
18	17 40 50.09	2.2154	27 28 54.9	2.564
19	17 43 3.07	2.2172	27 31 24.8	2.433
20	17 45 16.15	2.2188	27 33 46.8	2.300
21	17 47 29.33	2.2205	27 36 0.8	2.168
22	17 49 42.61	2.2222	27 38 6.9	2.035
23	17 51 55.99	2.2238	S. 27 40 5.0	1.903
	SATURDAY 2.			
0	17 54 9.46	2.2252	S. 27 41 55.2	1.770
1	17 56 23.01	2.2266	27 43 37.4	1.636
2	17 58 36.65	2.2279	27 45 11.5	1.502
3	18 0 50.36	2.2292	27 46 37.6	1.368
4	18 3 4.15	2.2304	27 47 55.7	1.234
5	18 5 18.01	2.2315	27 49 5.7	1.100
6	18 7 31.93	2.2326	27 50 7.7	0.966
7	18 9 45.92	2.2337	27 51 1.6	0.830
8	18 11 59.97	2.2346	27 51 47.3	0.695
9	18 14 14.07	2.2355	27 52 25.0	0.561
10	18 16 28.23	2.2363	27 52 54.6	0.425
11	18 18 42.43	2.2371	27 53 16.0	0.289
12	18 20 56.68	2.2378	27 53 29.3	0.154
13	18 23 10.96	2.2383	27 53 34.5	−0.018
14	18 25 25.28	2.2389	27 53 31.5	+0.118
15	18 27 39.63	2.2393	27 53 20.4	0.253
16	18 29 54.00	2.2398	27 53 1.1	0.389
17	18 32 8.40	2.2401	27 52 33.7	0.525
18	18 34 22.81	2.2403	27 51 58.1	0.662
19	18 36 37.24	2.2406	27 51 14.3	0.798
20	18 38 51.68	2.2407	27 50 22.4	0.933
21	18 41 6.12	2.2407	27 49 22.3	1.070
22	18 43 20.56	2.2407	27 48 14.0	1.206
23	18 45 35.00	2.2406	27 46 57.6	1.342
24	18 47 49.43	2.2404	S. 27 45 33.0	1.478

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 3.			
	h m s	s	° ′ ″	″
0	18 47 49.43	2.2404	S. 27 45 33.0	1.478
1	18 50 3.85	2.2403	27 44 0.2	1.614
2	18 52 18.26	2.2399	27 42 19.3	1.750
3	18 54 32.64	2.2395	27 40 30.2	1.887
4	18 56 47.00	2.2391	27 38 32.9	2.023
5	18 59 1.33	2.2386	27 36 27.5	2.158
6	19 1 15.63	2.2380	27 34 13.9	2.294
7	19 3 29.89	2.2373	27 31 52.2	2.429
8	19 5 44.11	2.2367	27 29 22.4	2.565
9	19 7 58.29	2.2359	27 26 44.4	2.700
10	19 10 12.42	2.2351	27 23 58.4	2.835
11	19 12 26.50	2.2342	27 21 4.2	2.971
12	19 14 40.52	2.2332	27 18 1.9	3.106
13	19 16 54.48	2.2321	27 14 51.5	3.240
14	19 19 8.37	2.2310	27 11 33.1	3.374
15	19 21 22.20	2.2298	27 8 6.6	3.508
16	19 23 35.95	2.2286	27 4 32.1	3.643
17	19 25 49.63	2.2273	27 0 49.5	3.777
18	19 28 3.23	2.2259	26 56 58.9	3.910
19	19 30 16.74	2.2245	26 53 0.3	4.043
20	19 32 30.17	2.2231	26 48 53.7	4.176
21	19 34 43.51	2.2215	26 44 39.2	4.308
22	19 36 56.75	2.2199	26 40 16.7	4.441
23	19 39 9.90	2.2183	S. 26 35 46.3	4.573
	MONDAY 4.			
0	19 41 22.94	2.2165	S. 26 31 8.0	4.704
1	19 43 35.88	2.2148	26 26 21.8	4.836
2	19 45 48.71	2.2129	26 21 27.7	4.967
3	19 48 1.43	2.2111	26 16 25.8	5.097
4	19 50 14.04	2.2092	26 11 16.1	5.227
5	19 52 26.53	2.2072	26 5 58.6	5.357
6	19 54 38.90	2.2051	26 0 33.3	5.486
7	19 56 51.14	2.2030	25 55 0.3	5.615
8	19 59 3.26	2.2009	25 49 19.5	5.744
9	20 1 15.25	2.1988	25 43 31.0	5.872
10	20 3 27.11	2.1965	25 37 34.9	5.998
11	20 5 38.83	2.1942	25 31 31.2	6.126
12	20 7 50.41	2.1919	25 25 19.8	6.253
13	20 10 1.86	2.1896	25 19 0.8	6.379
14	20 12 13.16	2.1872	25 12 34.3	6.504
15	20 14 24.32	2.1848	25 6 0.3	6.629
16	20 16 35.33	2.1823	24 59 18.8	6.754
17	20 18 46.19	2.1798	24 52 29.8	6.878
18	20 20 56.90	2.1772	24 45 33.4	7.002
19	20 23 7.45	2.1746	24 38 29.6	7.124
20	20 25 17.85	2.1721	24 31 18.5	7.247
21	20 27 28.10	2.1694	24 24 0.0	7.368
22	20 29 38.18	2.1667	24 16 34.3	7.489
23	20 31 48.10	2.1640	24 9 1.3	7.610
24	20 33 57.86	2.1613	S. 24 1 21.1	7.730

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 5.			
	h m s	s	° ′ ″	″
0	20 33 57.86	2.1613	S. 24 1 21.1	7.730
1	20 36 7.46	2.1586	23 53 33.7	7.849
2	20 38 16.89	2.1558	23 45 39.2	7.968
3	20 40 26.15	2.1529	23 37 37.6	8.086
4	20 42 35.24	2.1502	23 29 28.9	8.204
5	20 44 44.17	2.1473	23 21 13.1	8.321
6	20 46 52.92	2.1444	23 12 50.4	8.437
7	20 49 1.50	2.1415	23 4 20.7	8.553
8	20 51 9.90	2.1386	22 55 44.1	8.667
9	20 53 18.13	2.1358	22 47 0.7	8.781
10	20 55 26.19	2.1328	22 38 10.4	8.894
11	20 57 34.07	2.1298	22 29 13.4	9.007
12	20 59 41.77	2.1269	22 20 9.6	9.119
13	21 1 49.30	2.1240	22 10 59.1	9.230
14	21 3 56.65	2.1210	22 1 42.0	9.341
15	21 6 3.82	2.1180	21 52 18.2	9.451
16	21 8 10.81	2.1150	21 42 47.9	9.559
17	21 10 17.62	2.1120	21 33 11.1	9.668
18	21 12 24.25	2.1091	21 23 27.8	9.775
19	21 14 30.71	2.1061	21 13 38.1	9.882
20	21 16 36.98	2.1030	21 3 42.0	9.988
21	21 18 43.07	2.1001	20 53 39.5	10.093
22	21 20 48.99	2.0972	20 43 30.8	10.198
23	21 22 54.73	2.0941	S. 20 33 15.8	10.301
	WEDNESDAY 6.			
0	21 25 0.28	2.0911	S. 20 22 54.7	10.403
1	21 27 5.66	2.0882	20 12 27.4	10.506
2	21 29 10.86	2.0853	20 1 54.0	10.607
3	21 31 15.89	2.0823	19 51 14.6	10.707
4	21 33 20.74	2.0793	19 40 29.2	10.807
5	21 35 25.41	2.0764	19 29 37.8	10.906
6	21 37 29.91	2.0735	19 18 40.5	11.003
7	21 39 34.23	2.0706	19 7 37.4	11.100
8	21 41 38.38	2.0678	18 56 28.5	11.197
9	21 43 42.36	2.0649	18 45 13.8	11.292
10	21 45 46.17	2.0620	18 33 53.5	11.386
11	21 47 49.80	2.0591	18 22 27.5	11.480
12	21 49 53.26	2.0563	18 10 55.9	11.573
13	21 51 56.56	2.0536	17 59 18.8	11.664
14	21 53 59.69	2.0508	17 47 36.2	11.755
15	21 56 2.65	2.0480	17 35 48.2	11.845
16	21 58 5.45	2.0453	17 23 54.8	11.934
17	22 0 8.09	2.0427	17 11 56.1	12.022
18	22 2 10.57	2.0400	16 59 52.2	12.109
19	22 4 12.89	2.0373	16 47 43.0	12.196
20	22 6 15.05	2.0347	16 35 28.7	12.281
21	22 8 17.05	2.0321	16 23 9.3	12.366
22	22 10 18.90	2.0296	16 10 44.8	12.450
23	22 12 20.60	2.0271	15 58 15.3	12.533
24	22 14 22.15	2.0246	S. 15 45 40.9	12.614

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 7.			
	h m s	s	° ′ ″	″
0	22 14 22.15	2.0246	S. 15 45 40.9	12.614
1	22 16 23.55	2.0222	15 33 1.6	12.695
2	22 18 24.81	2.0198	15 20 17.5	12.774
3	22 20 25.93	2.0174	15 7 28.7	12.853
4	22 22 26.90	2.0150	14 54 35.1	12.932
5	22 24 27.73	2.0128	14 41 36.9	13.008
6	22 26 28.43	2.0105	14 28 34.1	13.085
7	22 28 28.99	2.0083	14 15 26.7	13.160
8	22 30 29.42	2.0061	14 2 14.9	13.233
9	22 32 29.72	2.0039	13 48 58.7	13.307
10	22 34 29.89	2.0018	13 35 38.1	13.379
11	22 36 29.94	1.9998	13 22 13.2	13.450
12	22 38 29.87	1.9978	13 8 44.1	13.520
13	22 40 29.68	1.9958	12 55 10.8	13.589
14	22 42 29.37	1.9939	12 41 33.4	13.658
15	22 44 28.95	1.9921	12 27 51.9	13.725
16	22 46 28.42	1.9903	12 14 6.4	13.791
17	22 48 27.78	1.9885	12 0 17.0	13.856
18	22 50 27.04	1.9868	11 46 23.7	13.920
19	22 52 26.20	1.9852	11 32 26.6	13.983
20	22 54 25.26	1.9835	11 18 25.7	14.045
21	22 56 24.22	1.9819	11 4 21.2	14.106
22	22 58 23.09	1.9804	10 50 13.0	14.167
23	23 0 21.87	1.9790	S. 10 36 1.2	14.225
	FRIDAY 8.			
0	23 2 20.57	1.9776	S. 10 21 46.0	14.283
1	23 4 19.18	1.9763	10 7 27.3	14.340
2	23 6 17.72	1.9750	9 53 5.2	14.396
3	23 8 16.18	1.9737	9 38 39.8	14.451
4	23 10 14.56	1.9725	9 24 11.1	14.505
5	23 12 12.88	1.9714	9 9 39.2	14.558
6	23 14 11.13	1.9703	8 55 4.2	14.608
7	23 16 9.32	1.9693	8 40 26.2	14.659
8	23 18 7.45	1.9684	8 25 45.1	14.709
9	23 20 5.53	1.9675	8 11 1.1	14.758
10	23 22 3.55	1.9667	7 56 14.2	14.805
11	23 24 1.53	1.9659	7 41 24.5	14.851
12	23 25 59.46	1.9652	7 26 32.1	14.896
13	23 27 57.35	1.9646	7 11 37.0	14.940
14	23 29 55.21	1.9640	6 56 39.3	14.983
15	23 31 53.03	1.9635	6 41 39.0	15.026
16	23 33 50.83	1.9631	6 26 36.2	15.067
17	23 35 48.60	1.9627	6 11 31.0	15.106
18	23 37 46.35	1.9623	5 56 23.5	15.144
19	23 39 44.08	1.9621	5 41 13.7	15.182
20	23 41 41.80	1.9619	5 26 1.7	15.218
21	23 43 39.51	1.9618	5 10 47.6	15.253
22	23 45 37.21	1.9617	4 55 31.4	15.288
23	23 47 34.91	1.9618	4 40 13.1	15.321
24	23 49 32.62	1.9618	S. 4 24 52.9	15.353

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 9.			
	h m s	s	° ′ ″	″
0	23 49 32.62	1.9618	S. 4 24 52.9	15.353
1	23 51 30.33	1.9620	4 9 30.8	15.383
2	23 53 28.06	1.9623	3 54 7.0	15.412
3	23 55 25.80	1.9625	3 38 41.4	15.441
4	23 57 23.56	1.9629	3 23 14.1	15.468
5	23 59 21.35	1.9633	3 7 45.3	15.493
6	0 1 19.16	1.9638	2 52 14.9	15.518
7	0 3 17.01	1.9644	2 36 43.1	15.542
8	0 5 14.89	1.9650	2 21 9.9	15.564
9	0 7 12.81	1.9658	2 5 35.4	15.586
10	0 9 10.78	1.9665	1 49 59.6	15.607
11	0 11 8.79	1.9673	1 34 22.6	15.625
12	0 13 6.86	1.9683	1 18 44.6	15.642
13	0 15 4.99	1.9693	1 3 5.6	15.658
14	0 17 3.18	1.9703	0 47 25.6	15.674
15	0 19 1.43	1.9715	0 31 44.7	15.688
16	0 20 59.76	1.9728	0 16 3.0	15.702
17	0 22 58.17	1.9741	S. 0 0 20.5	15.713
18	0 24 56.65	1.9754	N. 0 15 22.6	15.723
19	0 26 55.22	1.9769	0 31 6.3	15.733
20	0 28 53.88	1.9784	0 46 50.5	15.741
21	0 30 52.63	1.9800	1 2 35.2	15.748
22	0 32 51.48	1.9818	1 18 20.2	15.753
23	0 34 50.44	1.9835	N. 1 34 5.5	15.757
	SUNDAY 10.			
0	0 36 49.50	1.9853	N. 1 49 51.0	15.760
1	0 38 48.67	1.9872	2 5 36.7	15.762
2	0 40 47.96	1.9892	2 21 22.4	15.762
3	0 42 47.37	1.9913	2 37 8.1	15.761
4	0 44 46.91	1.9934	2 52 53.7	15.758
5	0 46 46.58	1.9956	3 8 39.1	15.755
6	0 48 46.38	1.9978	3 24 24.3	15.751
7	0 50 46.32	2.0003	3 40 9.2	15.745
8	0 52 46.41	2.0027	3 55 53.7	15.738
9	0 54 46.64	2.0052	4 11 37.7	15.728
10	0 56 47.03	2.0078	4 27 21.1	15.718
11	0 58 47.58	2.0105	4 43 3.9	15.708
12	1 0 48.29	2.0133	4 58 46.0	15.695
13	1 2 49.17	2.0161	5 14 27.3	15.681
14	1 4 50.22	2.0190	5 30 7.7	15.665
15	1 6 51.45	2.0220	5 45 47.1	15.648
16	1 8 52.86	2.0250	6 1 25.5	15.631
17	1 10 54.45	2.0282	6 17 2.8	15.611
18	1 12 56.24	2.0314	6 32 38.8	15.590
19	1 14 58.22	2.0347	6 48 13.6	15.568
20	1 17 0.40	2.0381	7 3 47.0	15.545
21	1 19 2.79	2.0416	7 19 19.0	15.520
22	1 21 5.39	2.0451	7 34 49.4	15.493
23	1 23 8.20	2.0487	7 50 18.2	15.466
24	1 25 11.23	2.0524	N. 8 5 45.3	15.437

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 11.			
	h m s	s	° ′ ″	″
0	1 25 11.23	2.0524	N. 8 5 45.3	15.437
1	1 27 14.49	2.0562	8 21 10.6	15.406
2	1 29 17.97	2.0599	8 36 34.0	15.374
3	1 31 21.68	2.0638	8 51 55.5	15.341
4	1 33 25.63	2.0679	9 7 14.9	15.306
5	1 35 29.83	2.0720	9 22 32.2	15.269
6	1 37 34.27	2.0761	9 37 47.2	15.231
7	1 39 38.96	2.0803	9 52 59.9	15.193
8	1 41 43.90	2.0846	10 8 10.3	15.153
9	1 43 49.11	2.0890	10 23 18.2	15.110
10	1 45 54.58	2.0934	10 38 23.5	15.066
11	1 48 0.32	2.0979	10 53 26.1	15.021
12	1 50 6.33	2.1025	11 8 26.0	14.975
13	1 52 12.62	2.1072	11 23 23.1	14.927
14	1 54 19.19	2.1118	11 38 17.2	14.877
15	1 56 26.04	2.1167	11 53 8.3	14.826
16	1 58 33.19	2.1216	12 7 56.3	14.773
17	2 0 40.63	2.1265	12 22 41.1	14.719
18	2 2 48.37	2.1315	12 37 22.6	14.663
19	2 4 56.41	2.1366	12 52 0.7	14.606
20	2 7 4.76	2.1418	13 6 35.3	14.547
21	2 9 13.42	2.1470	13 21 6.3	14.487
22	2 11 22.40	2.1523	13 35 33.7	14.425
23	2 13 31.70	2.1577	N. 13 49 57.3	14.362
	TUESDAY 12.			
0	2 15 41.32	2.1631	N. 14 4 17.1	14.297
1	2 17 51.27	2.1685	14 18 32.9	14.230
2	2 20 1.54	2.1740	14 32 44.7	14.162
3	2 22 12.15	2.1797	14 46 52.3	14.092
4	2 24 23.10	2.1853	15 0 55.7	14.021
5	2 26 34.39	2.1911	15 14 54.8	13.948
6	2 28 46.03	2.1969	15 28 49.5	13.873
7	2 30 58.02	2.2028	15 42 39.6	13.797
8	2 33 10.36	2.2086	15 56 25.1	13.719
9	2 35 23.05	2.2145	16 10 5.9	13.640
10	2 37 36.10	2.2205	16 23 41.9	13.558
11	2 39 49.51	2.2266	16 37 12.9	13.476
12	2 42 3.29	2.2327	16 50 39.0	13.392
13	2 44 17.43	2.2388	17 4 0.0	13.306
14	2 46 31.95	2.2451	17 17 15.7	13.218
15	2 48 46.84	2.2513	17 30 26.1	13.129
16	2 51 2.10	2.2575	17 43 31.2	13.039
17	2 53 17.74	2.2639	17 56 30.8	12.946
18	2 55 33.77	2.2703	18 9 24.7	12.851
19	2 57 50.18	2.2768	18 22 12.9	12.756
20	3 0 6.98	2.2832	18 34 55.4	12.658
21	3 2 24.16	2.2896	18 47 31.9	12.558
22	3 4 41.73	2.2962	19 0 2.4	12.458
23	3 6 59.70	2.3028	19 12 26.9	12.356
24	3 9 18.06	2.3093	N. 19 24 45.1	12.251

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 13.			
	h m s	s	° ′ ″	″
0	3 9 18.06	2.3093	N.19 24 45.1	12.251
1	3 11 36.82	2.3159	19 36 57.0	12.246
2	3 13 55.97	2.3225	19 49 2.6	12.038
3	3 16 15.52	2.3292	20 1 1.6	11.928
4	3 18 35.47	2.3358	20 12 54.0	11.818
5	3 20 55.82	2.3426	20 24 39.8	11.706
6	3 23 16.58	2.3493	20 36 18.7	11.591
7	3 25 37.74	2.3560	20 47 50.7	11.475
8	3 27 59.30	2.3627	20 59 15.7	11.358
9	3 30 21.26	2.3694	21 10 33.7	11.239
10	3 32 43.63	2.3762	21 21 44.4	11.118
11	3 35 6.40	2.3829	21 32 47.8	10.995
12	3 37 29.58	2.3898	21 43 43.8	10.871
13	3 39 53.17	2.3965	21 54 32.3	10.744
14	3 42 17.16	2.4032	22 5 13.1	10.617
15	3 44 41.55	2.4099	22 15 46.3	10.488
16	3 47 6.35	2.4167	22 26 11.7	10.357
17	3 49 31.55	2.4233	22 36 29.1	10.224
18	3 51 57.15	2.4301	22 46 38.6	10.090
19	3 54 23.16	2.4368	22 56 39.9	9.954
20	3 56 49.57	2.4434	23 6 33.1	9.817
21	3 59 16.37	2.4500	23 16 18.0	9.678
22	4 1 43.57	2.4567	23 25 54.5	9.538
23	4 4 11.17	2.4633	N.23 35 22.5	9.395
	THURSDAY 14.			
0	4 6 39.16	2.4698	N.23 44 41.9	9.252
1	4 9 7.54	2.4763	23 53 52.7	9.107
2	4 11 36.31	2.4828	24 2 54.7	8.959
3	4 14 5.47	2.4892	24 11 47.8	8.811
4	4 16 35.01	2.4955	24 20 32.0	8.661
5	4 19 4.93	2.5018	24 29 7.1	8.509
6	4 21 35.22	2.5080	24 37 33.1	8.357
7	4 24 5.89	2.5143	24 45 49.9	8.202
8	4 26 36.93	2.5203	24 53 57.3	8.045
9	4 29 8.33	2.5264	25 1 55.3	7.888
10	4 31 40.10	2.5324	25 9 43.9	7.730
11	4 34 12.22	2.5383	25 17 22.9	7.569
12	4 36 44.69	2.5441	25 24 52.2	7.408
13	4 39 17.51	2.5499	25 32 11.8	7.245
14	4 41 50.68	2.5557	25 39 21.6	7.080
15	4 44 24.19	2.5613	25 46 21.4	6.913
16	4 46 58.03	2.5667	25 53 11.2	6.747
17	4 49 32.19	2.5721	25 59 51.0	6.578
18	4 52 6.68	2.5774	26 6 20.6	6.408
19	4 54 41.48	2.5826	26 12 40.0	6.238
20	4 57 16.59	2.5878	26 18 49.1	6.066
21	4 59 52.01	2.5928	26 24 47.9	5.893
22	5 2 27.72	2.5976	26 30 36.2	5.718
23	5 5 3.72	2.6024	26 36 14.0	5.542
24	5 7 40.01	2.6072	N.26 41 41.2	5.365

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute
	FRIDAY 15.			
	h m s	s	° ′ ″	″
0	5 7 40.01	2.6072	N.26 41 41.2	5.365
1	5 10 16.58	2.6117	26 46 57.8	5.187
2	5 12 53.41	2.6161	26 52 3.6	5.008
3	5 15 30.51	2.6204	26 56 58.7	4.828
4	5 18 7.86	2.6246	27 1 42.9	4.646
5	5 20 45.46	2.6286	27 6 16.2	4.464
6	5 23 23.29	2.6325	27 10 38.6	4.282
7	5 26 1.36	2.6363	27 14 50.0	4.098
8	5 28 39.65	2.6399	27 18 50.3	3.913
9	5 31 18.15	2.6434	27 22 39.5	3.727
10	5 33 56.86	2.6468	27 26 17.5	3.540
11	5 36 35.77	2.6500	27 29 44.3	3.353
12	5 39 14.86	2.6530	27 32 59.8	3.164
13	5 41 54.13	2.6559	27 36 4.0	2.976
14	5 44 33.57	2.6587	27 38 56.9	2.787
15	5 47 13.17	2.6613	27 41 38.4	2.596
16	5 49 52.92	2.6637	27 44 8.4	2.405
17	5 52 32.81	2.6660	27 46 27.0	2.214
18	5 55 12.84	2.6682	27 48 34.1	2.023
19	5 57 52.99	2.6701	27 50 29.7	1.831
20	6 0 33.25	2.6718	27 52 13.8	1.638
21	6 3 13.61	2.6734	27 53 46.3	1.445
22	6 5 54.06	2.6749	27 55 7.2	1.252
23	6 8 34.60	2.6762	N.27 56 16.5	1.058
	SATURDAY 16.			
0	6 11 15.21	2.6773	N.27 57 14.1	0.863
1	6 13 55.88	2.6783	27 58 0.1	0.669
2	6 16 36.61	2.6791	27 58 34.4	0.474
3	6 19 17.37	2.6797	27 58 57.0	0.279
4	6 21 58.17	2.6802	27 59 7.9	+0.085
5	6 24 38.99	2.6804	27 59 7.2	−0.109
6	6 27 19.82	2.6804	27 58 54.8	0.305
7	6 30 0.64	2.6803	27 58 30.6	0.500
8	6 32 41.46	2.6802	27 57 54.8	0.694
9	6 35 22.26	2.6798	27 57 7.3	0.889
10	6 38 3.03	2.6792	27 56 8.1	1.084
11	6 40 43.76	2.6784	27 54 57.2	1.278
12	6 43 24.44	2.6775	27 53 34.7	1.473
13	6 46 5.06	2.6763	27 52 0.5	1.667
14	6 48 45.60	2.6750	27 50 14.7	1.861
15	6 51 26.06	2.6736	27 48 17.2	2.055
16	6 54 6.43	2.6720	27 46 8.1	2.248
17	6 56 46.70	2.6703	27 43 47.5	2.439
18	6 59 26.86	2.6683	27 41 15.4	2.632
19	7 2 6.90	2.6662	27 38 31.7	2.824
20	7 4 46.81	2.6639	27 35 36.5	3.015
21	7 7 26.57	2.6615	27 32 29.9	3.205
22	7 10 6.19	2.6590	27 29 11.9	3.395
23	7 12 45.65	2.6563	27 25 42.5	3.585
24	7 15 24.94	2.6533	N.27 22 1.7	3.774

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 17.			
	h m s	s	° ′ ″	″
0	7 15 24.94	2.6533	N.27 22 1.7	3.774
1	7 18 4.05	2.6503	27 18 9.7	3.961
2	7 20 42.97	2.6471	27 14 6.4	4.148
3	7 23 21.70	2.6438	27 9 51.9	4.335
4	7 26 0.22	2.6403	27 5 26.2	4.521
5	7 28 38.53	2.6366	27 0 49.4	4.705
6	7 31 16.61	2.6328	26 56 1.6	4.888
7	7 33 54.47	2.6290	26 51 2.8	5.072
8	7 36 32.09	2.6249	26 45 53.0	5.254
9	7 39 9.46	2.6208	26 40 32.3	5.435
10	7 41 46.58	2.6164	26 35 0.8	5.614
11	7 44 23.43	2.6120	26 29 18.6	5.793
12	7 47 0.02	2.6075	26 23 25.7	5.970
13	7 49 36.33	2.6028	26 17 22.2	6.147
14	7 52 12.36	2.5980	26 11 8.1	6.323
15	7 54 48.09	2.5931	26 4 43.5	6.497
16	7 57 23.53	2.5881	25 58 8.5	6.669
17	7 59 58.66	2.5829	25 51 23.2	6.841
18	8 2 33.48	2.5778	25 44 27.6	7.012
19	8 5 7.99	2.5725	25 37 21.8	7.181
20	8 7 42.18	2.5671	25 30 5.9	7.348
21	8 10 16.04	2.5615	25 22 40.0	7.514
22	8 12 49.56	2.5558	25 15 4.2	7.679
23	8 15 22.74	2.5502	N.25 7 18.5	7.843
	MONDAY 18.			
0	8 17 55.58	2.5444	N.24 59 23.0	8.006
1	8 20 28.07	2.5385	24 51 17.8	8.167
2	8 23 0.20	2.5326	24 43 3.0	8.326
3	8 25 31.98	2.5266	24 34 38.7	8.483
4	8 28 3.39	2.5205	24 26 5.0	8.639
5	8 30 34.44	2.5143	24 17 22.0	8.794
6	8 33 5.11	2.5081	24 8 29.7	8.947
7	8 35 35.41	2.5018	23 59 28.3	9.098
8	8 38 5.33	2.4955	23 50 17.9	9.248
9	8 40 34.87	2.4892	23 40 58.5	9.398
10	8 43 4.03	2.4827	23 31 30.2	9.545
11	8 45 32.79	2.4762	23 21 53.1	9.690
12	8 48 1.17	2.4698	23 12 7.4	9.833
13	8 50 29.16	2.4632	23 2 13.1	9.975
14	8 52 56.75	2.4565	22 52 10.4	10.115
15	8 55 23.94	2.4498	22 41 59.3	10.254
16	8 57 50.73	2.4432	22 31 39.9	10.392
17	9 0 17.12	2.4365	22 21 12.3	10.527
18	9 2 43.11	2.4298	22 10 36.7	10.660
19	9 5 8.70	2.4231	21 59 53.1	10.792
20	9 7 33.88	2.4163	21 49 1.7	10.922
21	9 9 58.66	2.4096	21 38 2.5	11.051
22	9 12 23.03	2.4028	21 26 55.6	11.178
23	9 14 46.99	2.3959	21 15 41.2	11.302
24	9 17 10.54	2.3891	N.21 4 19.4	11.425

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 19.			
	h m s	s	° ′ ″	″
0	9 17 10.54	2.3891	N.21 4 19.4	11.425
1	9 19 33.68	2.3823	20 52 50.2	11.547
2	9 21 56.42	2.3756	20 41 13.8	11.666
3	9 24 18.75	2.3688	20 29 30.3	11.783
4	9 26 40.67	2.3619	20 17 39.8	11.899
5	9 29 2.18	2.3551	20 5 42.4	12.014
6	9 31 23.28	2.3483	19 53 38.1	12.127
7	9 33 43.98	2.3416	19 41 27.1	12.238
8	9 36 4.27	2.3348	19 29 9.5	12.347
9	9 38 24.15	2.3280	19 16 45.4	12.454
10	9 40 43.63	2.3213	19 4 15.0	12.560
11	9 43 2.71	2.3146	18 51 38.3	12.663
12	9 45 21.38	2.3078	18 38 55.4	12.765
13	9 47 39.65	2.3012	18 26 6.5	12.865
14	9 49 57.53	2.2947	18 13 11.6	12.963
15	9 52 15.01	2.2881	18 0 10.9	13.060
16	9 54 32.10	2.2815	17 47 4.4	13.155
17	9 56 48.79	2.2749	17 33 52.3	13.248
18	9 59 5.09	2.2685	17 20 34.7	13.338
19	10 1 21.01	2.2621	17 7 11.7	13.428
20	10 3 36.54	2.2556	16 53 43.3	13.517
21	10 5 51.68	2.2492	16 40 9.7	13.603
22	10 8 6.44	2.2428	16 26 31.0	13.686
23	10 10 20.82	2.2366	N.16 12 47.3	13.768
	WEDNESDAY 20.			
0	10 12 34.83	2.2303	N.15 58 58.8	13.849
1	10 14 48.46	2.2242	15 45 5.5	13.928
2	10 17 1.73	2.2181	15 31 7.5	14.005
3	10 19 14.63	2.2119	15 17 4.9	14.081
4	10 21 27.16	2.2058	15 2 57.8	14.155
5	10 23 39.33	2.1999	14 48 46.3	14.227
6	10 25 51.15	2.1940	14 34 30.6	14.297
7	10 28 2.61	2.1881	14 20 10.7	14.366
8	10 30 13.72	2.1823	14 5 46.7	14.433
9	10 32 24.48	2.1765	13 51 18.8	14.498
10	10 34 34.90	2.1708	13 36 47.0	14.561
11	10 36 44.98	2.1652	13 22 11.5	14.623
12	10 38 54.72	2.1596	13 7 32.3	14.683
13	10 41 4.13	2.1541	12 52 49.6	14.741
14	10 43 13.21	2.1486	12 38 3.4	14.798
15	10 45 21.96	2.1432	12 23 13.8	14.853
16	10 47 30.39	2.1379	12 8 21.0	14.906
17	10 49 38.51	2.1327	11 53 25.1	14.958
18	10 51 46.31	2.1274	11 38 26.1	15.008
19	10 53 53.80	2.1223	11 23 24.1	15.057
20	10 56 0.98	2.1172	11 8 19.2	15.104
21	10 58 7.86	2.1122	10 53 11.6	15.149
22	11 0 14.44	2.1073	10 38 1.3	15.193
23	11 2 20.73	2.1024	10 22 48.4	15.236
24	11 4 26.73	2.0977	N.10 7 33.0	15.276

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 21.			
	h m s	s	° ′ ″	″
0	11 4 26.73	2.0977	N. 10 7 33.0	15.276
1	11 6 32.45	2.0929	9 52 15.3	15.314
2	11 8 37.88	2.0883	9 36 55.3	15.352
3	11 10 43.04	2.0838	9 21 33.0	15.389
4	11 12 47.93	2.0793	9 6 8.6	15.423
5	11 14 52.55	2.0748	8 50 42.3	15.455
6	11 16 56.90	2.0704	8 35 14.0	15.487
7	11 19 1.00	2.0662	8 19 43.9	15.517
8	11 21 4.84	2.0619	8 4 12.0	15.545
9	11 23 8.43	2.0578	7 48 38.5	15.572
10	11 25 11.78	2.0538	7 33 3.4	15.597
11	11 27 14.88	2.0498	7 17 26.9	15.620
12	11 29 17.75	2.0459	7 1 49.0	15.642
13	11 31 20.39	2.0419	6 46 9.8	15.663
14	11 33 22.80	2.0382	6 30 29.4	15.683
15	11 35 24.98	2.0346	6 14 47.9	15.701
16	11 37 26.95	2.0310	5 59 5.3	15.718
17	11 39 28.70	2.0275	5 43 21.8	15.733
18	11 41 30.25	2.0241	5 27 37.4	15.746
19	11 43 31.59	2.0207	5 11 52.3	15.758
20	11 45 32.73	2.0174	4 56 6.5	15.769
21	11 47 33.68	2.0142	4 40 20.0	15.779
22	11 49 34.43	2.0109	4 24 33.0	15.787
23	11 51 34.99	2.0079	N. 4 8 45.6	15.793
	FRIDAY 22.			
0	11 53 35.38	2.0050	N. 3 52 57.8	15.799
1	11 55 35.59	2.0021	3 37 9.7	15.803
2	11 57 35.63	1.9993	3 21 21.5	15.805
3	11 59 35.50	1.9965	3 5 33.1	15.807
4	12 1 35.21	1.9938	2 49 44.7	15.807
5	12 3 34.76	1.9912	2 33 56.3	15.805
6	12 5 34.15	1.9886	2 18 8.1	15.803
7	12 7 33.39	1.9862	2 2 20.0	15.799
8	12 9 32.49	1.9838	1 46 32.2	15.793
9	12 11 31.45	1.9815	1 30 44.8	15.787
10	12 13 30.27	1.9793	1 14 57.8	15.779
11	12 15 28.96	1.9771	0 59 11.3	15.770
12	12 17 27.52	1.9750	0 43 25.4	15.759
13	12 19 25.96	1.9730	0 27 40.2	15.748
14	12 21 24.28	1.9711	N. 0 11 55.7	15.735
15	12 23 22.49	1.9693	S. 0 3 48.0	15.722
16	12 25 20.59	1.9674	0 19 30.9	15.707
17	12 27 18.58	1.9657	0 35 12.8	15.689
18	12 29 16.48	1.9642	0 50 53.6	15.672
19	12 31 14.28	1.9626	1 6 33.4	15.653
20	12 33 11.99	1.9611	1 22 12.0	15.633
21	12 35 9.61	1.9596	1 37 49.3	15.611
22	12 37 7.14	1.9583	1 53 25.3	15.589
23	12 39 4.60	1.9570	2 9 0.0	15.566
24	12 41 1.98	1.9558	S. 2 24 33.2	15.541

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 23.			
	h m s	s	° ′ ″	″
0	12 41 1.98	1.9558	S. 2 24 33.2	15.541
1	12 42 59.30	1.9548	2 40 4.9	15.515
2	12 44 56.55	1.9537	2 55 35.0	15.488
3	12 46 53.74	1.9527	3 11 3.4	15.459
4	12 48 50.87	1.9518	3 26 30.1	15.430
5	12 50 47.95	1.9509	3 41 55.0	15.400
6	12 52 44.98	1.9502	3 57 18.1	15.368
7	12 54 41.97	1.9495	4 12 39.2	15.336
8	12 56 38.92	1.9488	4 27 58.4	15.303
9	12 58 35.83	1.9483	4 43 15.5	15.267
10	13 0 32.71	1.9478	4 58 30.4	15.231
11	13 2 29.57	1.9474	5 13 43.2	15.194
12	13 4 26.40	1.9470	5 28 53.7	15.156
13	13 6 23.21	1.9468	5 44 1.9	15.117
14	13 8 20.01	1.9466	5 59 7.7	15.077
15	13 10 16.80	1.9464	6 14 11.1	15.035
16	13 12 13.58	1.9463	6 29 11.9	14.993
17	13 14 10.36	1.9463	6 44 10.2	14.950
18	13 16 7.14	1.9463	6 59 5.9	14.906
19	13 18 3.92	1.9464	7 13 58.9	14.860
20	13 20 0.71	1.9466	7 28 49.1	14.813
21	13 21 57.51	1.9468	7 43 36.5	14.766
22	13 23 54.33	1.9472	7 58 21.0	14.718
23	13 25 51.17	1.9475	S. 8 13 2.6	14.668
	SUNDAY 24.			
0	13 27 48.03	1.9479	S. 8 27 41.2	14.618
1	13 29 44 92	1.9484	8 42 16.8	14.567
2	13 31 41.84	1.9490	8 56 49.2	14.513
3	13 33 38.80	1.9497	9 11 18.4	14.460
4	13 35 35.80	1.9503	9 25 44.4	14.406
5	13 37 32.84	1.9511	9 40 7.1	14.351
6	13 39 29.93	1.9518	9 54 26.5	14.295
7	13 41 27.06	1.9527	10 8 42.5	14.238
8	13 43 24.25	1.9537	10 22 55.0	14.179
9	13 45 21.50	1.9546	10 37 4.0	14.120
10	13 47 18.80	1.9556	10 51 9.4	14.060
11	13 49 16.17	1.9568	11 5 11.2	13.999
12	13 51 13.61	1.9579	11 19 9.3	13.937
13	13 53 11.12	1.9591	11 33 3.7	13.874
14	13 55 8.70	1.9603	11 46 54.2	13.810
15	13 57 6.36	1.9617	12 0 40.9	13.746
16	13 59 4.10	1.9630	12 14 23.7	13.681
17	14 1 1.92	1.9643	12 28 2.6	13.614
18	14 2 59.82	1.9658	12 41 37.4	13.547
19	14 4 57.82	1.9674	12 55 8.2	13.479
20	14 6 55.91	1.9689	13 8 34.9	13.410
21	14 8 54.09	1.9705	13 21 57.4	13.340
22	14 10 52.37	1.9722	13 35 15.7	13.269
23	14 12 50.75	1.9739	13 48 29.7	13.198
24	14 14 49.24	1.9757	S. 14 1 39.4	13.125

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 25.			
	h m s	s	° ′ ″	″
0	14 14 49.24	1.9757	S. 14 1 39.4	13.125
1	14 16 47.83	1.9775	14 14 44.7	13.050
2	14 18 46.54	1.9794	14 27 45.5	12.977
3	14 20 45.36	1.9813	14 40 41.9	12.902
4	14 22 44.29	1.9832	14 53 33.7	12.826
5	14 24 43.34	1.9852	15 6 21.0	12.749
6	14 26 42.51	1.9873	15 19 3.6	12.672
7	14 28 41.81	1.9895	15 31 41.6	12.593
8	14 30 41.23	1.9914	15 44 14.8	12.513
9	14 32 40.78	1.9936	15 56 43.2	12.433
10	14 34 40.46	1.9958	16 9 6.8	12.353
11	14 36 40.28	1.9981	16 21 25.5	12.270
12	14 38 40.23	2.0003	16 33 39.2	12.188
13	14 40 40.32	2.0027	16 45 48.0	12.104
14	14 42 40.55	2.0050	16 57 51.7	12.020
15	14 44 40.92	2.0074	17 9 50.4	11.936
16	14 46 41.44	2.0098	17 21 44.0	11.850
17	14 48 42.10	2.0123	17 33 32.4	11.763
18	14 50 42.91	2.0148	17 45 15.5	11.675
19	14 52 43.87	2.0174	17 56 53.4	11.587
20	14 54 44.99	2.0199	18 8 25.9	11.498
21	14 56 46.26	2.0225	18 19 53.1	11.408
22	14 58 47.69	2.0251	18 31 14.9	11.318
23	15 0 49.27	2.0277	S. 18 42 31.2	11.226
	TUESDAY 26.			
0	15 2 51.01	2.0303	S. 18 53 42.0	11.134
1	15 4 52.91	2.0331	19 4 47.3	11.042
2	15 6 54.98	2.0358	19 15 47.0	10.948
3	15 8 57.21	2.0386	19 26 41.0	10.853
4	15 10 59.61	2.0413	19 37 29.4	10.758
5	15 13 2.17	2.0441	19 48 12.0	10.662
6	15 15 4.90	2.0469	19 58 48.8	10.565
7	15 17 7.80	2.0498	20 9 19.8	10.468
8	15 19 10.87	2.0526	20 19 45.0	10.371
9	15 21 14.11	2.0554	20 30 4.3	10.272
10	15 23 17.52	2.0583	20 40 17.6	10.172
11	15 25 21.11	2.0613	20 50 24.9	10.072
12	15 27 24.87	2.0642	21 0 26.2	9.971
13	15 29 28.81	2.0671	21 10 21.4	9.869
14	15 31 32.92	2.0700	21 20 10.5	9.767
15	15 33 37.21	2.0729	21 29 53.5	9.664
16	15 35 41.67	2.0758	21 39 30.2	9.560
17	15 37 46.31	2.0788	21 49 0.7	9.456
18	15 39 51.13	2.0818	21 58 24.9	9.351
19	15 41 56.13	2.0848	22 7 42.8	9.245
20	15 44 1.31	2.0878	22 16 54.3	9.138
21	15 46 6.66	2.0907	22 25 59.4	9.031
22	15 48 12.19	2.0937	22 34 58.0	8.923
23	15 50 17.90	2.0968	22 43 50.2	8.815
24	15 52 23.80	2.0998	S. 22 52 35.8	8.706

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 27.			
	h m s	s	° ′ ″	″
0	15 52 23.80	2.0998	S. 22 52 35.8	8.706
1	15 54 29.88	2.1028	23 1 14.9	8.596
2	15 56 36.13	2.1057	23 9 47.3	8.485
3	15 58 42.56	2.1087	23 18 13.1	8.375
4	16 0 49.17	2.1117	23 26 32.3	8.263
5	16 2 55.96	2.1146	23 34 44.7	8.150
6	16 5 2.92	2.1175	23 42 50.3	8.038
7	16 7 10.06	2.1205	23 50 49.2	7.924
8	16 9 17.38	2.1235	23 58 41.2	7.810
9	16 11 24.88	2.1264	24 6 26.4	7.696
10	16 13 32.55	2.1293	24 14 4.7	7.580
11	16 15 40.39	2.1322	24 21 36.0	7.463
12	16 17 48.41	2.1351	24 29 0.3	7.347
13	16 19 56.60	2.1379	24 36 17.6	7.230
14	16 22 4.96	2.1408	24 43 27.9	7.113
15	16 24 13.49	2.1436	24 50 31.1	6.994
16	16 26 22.19	2.1464	24 57 27.2	6.876
17	16 28 31.06	2.1493	25 4 16.2	6.757
18	16 30 40.10	2.1520	25 10 58.0	6.636
19	16 32 49.30	2.1547	25 17 32.5	6.515
20	16 34 58.66	2.1573	25 23 59.8	6.395
21	16 37 8.18	2.1601	25 30 19.9	6.273
22	16 39 17.87	2.1628	25 36 32.6	6.151
23	16 41 27.71	2.1653	S. 25 42 38.0	6.028
	THURSDAY 28.			
0	16 43 37.71	2.1679	S. 25 48 36.0	5.905
1	16 45 47.86	2.1705	25 54 26.6	5.782
2	16 47 58.17	2.1731	26 0 9.8	5.658
3	16 50 8.63	2.1755	26 5 45.6	5.534
4	16 52 19.23	2.1779	26 11 13.9	5.408
5	16 54 29.98	2.1803	26 16 34.6	5.283
6	16 56 40.87	2.1828	26 21 47.8	5.158
7	16 58 51.91	2.1851	26 26 53.5	5.031
8	17 1 3.08	2.1873	26 31 51.5	4.903
9	17 3 14.39	2.1896	26 36 41.9	4.777
10	17 5 25.83	2.1918	26 41 24.7	4.649
11	17 7 37.41	2.1940	26 45 59.8	4.521
12	17 9 49.11	2.1961	26 50 27.2	4.393
13	17 12 0.94	2.1982	26 54 46.9	4.264
14	17 14 12.89	2.2002	26 58 58.9	4.135
15	17 16 24.96	2.2022	27 3 3.1	4.005
16	17 18 37.15	2.2041	27 6 59.5	3.875
17	17 20 49.45	2.2060	27 10 48.1	3.745
18	17 23 1.87	2.2078	27 14 28.9	3.615
19	17 25 14.39	2.2096	27 18 1.9	3.484
20	17 27 27.02	2.2113	27 21 27.0	3.353
21	17 29 39.75	2.2130	27 24 44.2	3.221
22	17 31 52.58	2.2147	27 27 53.5	3.089
23	17 34 5.51	2.2163	27 30 54.9	2.958
24	17 36 18.53	2.2178	S. 27 33 48.4	2.825

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 29.			
	h m s	s	° ′ ″	″
0	17 36 18.53	2.2178	S.27 33 48.4	2.825
1	17 38 31.64	2.2192	27 36 33.9	2.692
2	17 40 44.83	2.2205	27 39 11.4	2.559
3	17 42 58.10	2.2218	27 41 41.0	2.427
4	17 45 11.45	2.2231	27 44 2.6	2.293
5	17 47 24.87	2.2243	27 46 16.1	2.158
6	17 49 38.37	2.2255	27 48 21.6	2.025
7	17 51 51.93	2.2266	27 50 19.1	1.891
8	17 54 5.56	2.2277	27 52 8.5	1.757
9	17 56 19.25	2.2286	27 53 49.9	1.623
10	17 58 32.99	2.2295	27 55 23.2	1.488
11	18 0 46.79	2.2303	27 56 48.4	1.353
12	18 3 0.63	2.2311	27 58 5.5	1.218
13	18 5 14.52	2.2318	27 59 14.5	1.083
14	18 7 28.45	2.2324	28 0 15.4	0.948
15	18 9 42.41	2.2329	28 1 8.2	0.813
16	18 11 56.40	2.2335	28 1 52.9	0.678
17	18 14 10.43	2.2340	28 2 29.5	0.542
18	18 16 24.48	2.2343	28 2 57.9	0.406
19	18 18 38.55	2.2347	28 3 18.2	0.270
20	18 20 52.64	2.2350	28 3 30.3	−0.134
21	18 23 6.75	2.2352	28 3 34.3	+0.001
22	18 25 20.86	2.2353	28 3 30.2	0.137
23	18 27 34.98	2.2353	S.28 3 17.9	0.273
	SATURDAY 30.			
0	18 29 49.10	2.2353	S.28 2 57.5	0.408
1	18 32 3.22	2.2353	28 2 28.9	0.544
2	18 34 17.33	2.2351	28 1 52.2	0.680
3	18 36 31.43	2.2349	28 1 7.3	0.816
4	18 38 45.52	2.2347	28 0 14.3	0.951
5	18 40 59.59	2.2343	27 59 13.2	1.087
6	18 43 13.64	2.2339	27 58 3.9	1.223
7	18 45 27.66	2.2334	27 56 46.5	1.358
8	18 47 41.65	2.2329	27 55 21.0	1.493
9	18 49 55.61	2.2323	27 53 47.3	1.628
10	18 52 9.53	2.2317	27 52 5.6	1.763
11	18 54 23.41	2.2309	27 50 15.7	1.899
12	18 56 37.24	2.2301	27 48 17.7	2.034
13	18 58 51.02	2.2293	27 46 11.6	2.168
14	19 1 4.75	2.2284	27 43 57.5	2.303
15	19 3 18.43	2.2275	27 41 35.3	2.438
16	19 5 32.05	2.2264	27 39 5.0	2.572
17	19 7 45.60	2.2253	27 36 26.7	2.706
18	19 9 59.08	2.2242	27 33 40.3	2.840
19	19 12 12.50	2.2230	27 30 45.9	2.973
20	19 14 25.84	2.2217	27 27 43.5	3.107
21	19 16 39.10	2.2203	27 24 33.0	3.241
22	19 18 52.28	2.2190	27 21 14.6	3.373
23	19 21 5.38	2.2176	27 17 48.2	3.506
24	19 23 18.39	2.2161	S.27 14 13.9	3.638

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY, OCTOBER 1.			
	h m s	s	° ′ ″	″
0	19 23 18.39	2.2161	S.27 14 13.9	3.638

PHASES OF THE MOON.

			d	h	m
○	Full Moon	Sept.	8	3	56.7
☾	Last Quarter		15	5	50.8
●	New Moon		22	2	37.4
☽	First Quarter		29	23	8.0

			d	h
☾	Apogee	Sept.	1	19.3
☾	Perigee		16	18.0
☾	Apogee		29	14.5

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	SUN	W.	98 54 51	3447	100 16 14	3449	101 37 35	3451	102 58 54	3452
	Spica	W.	54 12 4	3073	55 40 46	3075	57 9 26	3076	58 38 4	3077
	JUPITER	W.	37 26 26	3126	38 54 4	3127	40 21 41	3128	41 49 16	3129
	Fomalhaut	E.	75 26 20	3267	74 1 30	3271	72 36 45	3276	71 12 5	3281
	α Pegasi	E.	96 16 50	3418	94 54 54	3418	93 32 58	3418	92 11 2	3419
2	SUN	W.	109 45 21	3450	111 6 41	3448	112 28 3	3446	113 49 27	3443
	Spica	W.	66 1 15	3073	67 29 57	3071	68 58 41	3069	70 27 28	3066
	JUPITER	W.	49 7 9	3126	50 34 46	3124	52 2 26	3122	53 30 9	3119
	Antares	W.	20 7 8	3079	21 35 43	3076	23 4 21	3073	24 33 4	3069
	Fomalhaut	E.	64 10 6	3303	62 45 58	3308	61 21 55	3313	59 57 58	3318
	α Pegasi	E.	85 21 27	3419	83 59 32	3420	82 37 38	3419	81 15 43	3420
3	SUN	W.	120 37 27	3423	121 59 17	3417	123 21 14	3412	124 43 17	3407
	Spica	W.	77 52 26	3046	79 21 41	3041	80 51 3	3035	82 20 32	3029
	JUPITER	W.	60 49 41	3100	62 17 51	3094	63 46 8	3088	65 14 31	3082
	Antares	W.	31 57 55	3046	33 27 11	3040	34 56 33	3034	36 26 3	3028
	Fomalhaut	E.	52 59 44	3347	51 36 27	3355	50 13 18	3364	48 50 20	3374
	α Pegasi	E.	74 26 15	3422	73 4 23	3423	71 42 32	3424	70 20 42	3425
	α Arietis	E.	116 13 41	3115	114 45 50	3108	113 17 51	3101	111 49 43	3094
4	Spica	W.	89 49 55	2995	91 20 14	2987	92 50 43	2978	94 21 23	2970
	JUPITER	W.	72 38 25	3048	74 7 38	3040	75 37 1	3032	77 6 34	3023
	Antares	W.	43 55 39	2992	45 26 2	2984	46 56 35	2976	48 27 18	2967
	Fomalhaut	E.	41 58 48	3446	40 37 23	3467	39 16 22	3491	37 55 48	3518
	α Pegasi	E.	63 32 7	3439	62 10 35	3444	60 49 8	3450	59 27 48	3456
	α Arietis	E.	104 26 41	3054	102 57 35	3045	101 28 18	3036	99 58 50	3027
	SATURN	E.	117 13 42	3001	115 43 31	2993	114 13 9	2984	112 42 37	2975
5	Spica	W.	101 57 25	2925	103 29 12	2915	105 1 12	2905	106 33 25	2895
	JUPITER	W.	84 37 4	2977	86 7 45	2967	87 38 39	2957	89 9 45	2947
	Antares	W.	56 3 39	2921	57 35 31	2911	59 7 35	2901	60 39 53	2891
	α Pegasi	E.	52 43 27	3511	51 23 14	3526	50 3 19	3544	48 43 43	3565
	α Arietis	E.	92 28 38	2979	90 58 0	2969	89 27 9	2959	87 56 5	2949
	SATURN	E.	105 7 2	2928	103 35 19	2919	102 3 24	2909	100 31 16	2898
	Aldebaran	E.	122 50 42	2985	121 20 11	2974	119 49 26	2962	118 18 25	2950
6	JUPITER	W.	96 48 33	2894	98 20 59	2883	99 53 40	2872	101 26 35	2861
	Antares	W.	68 24 41	2838	69 58 20	2827	71 32 13	2816	73 6 20	2805
	α Arietis	E.	80 17 36	2898	78 45 15	2888	77 12 41	2878	75 39 54	2868
	SATURN	E.	92 47 12	2844	91 13 42	2833	89 39 57	2822	88 5 58	2811
	Aldebaran	E.	110 39 37	2891	109 7 6	2878	107 34 19	2866	106 1 17	2855
7	JUPITER	W.	109 14 45	2805	110 49 7	2794	112 23 43	2783	113 58 34	2772
	Antares	W.	81 0 36	2749	82 36 12	2738	84 12 2	2726	85 48 7	2715
	α Arietis	E.	67 52 45	2818	66 18 41	2809	64 44 25	2800	63 9 56	2791
	SATURN	E.	80 12 25	2755	78 36 58	2744	77 1 17	2733	75 25 21	2722
	Aldebaran	E.	98 12 19	2796	96 37 46	2785	95 2 58	2773	93 27 55	2762
8	Antares	W.	93 52 13	2660	95 29 46	2649	97 7 34	2639	98 45 36	2629
	α Aquilæ	W.	52 18 13	4178	53 27 0	4102	54 37 0	4032	55 48 8	3968
	α Arietis	E.	55 14 45	2751	53 39 11	2744	52 3 29	2738	50 27 39	2732

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	104 20 11	3453	105 41 28	3453	107 2 45	3452	108 24 3	3451
	Spica	W.	60 6 42	3078	61 35 19	3077	63 3 57	3076	64 32 35	3075
	Jupiter	W.	43 16 51	3129	44 44 25	3129	46 11 59	3129	47 39 33	3128
	Fomalhaut	E.	69 47 31	3285	68 23 2	3289	66 58 38	3294	65 34 19	3299
	α Pegasi	E.	90 49 7	3419	89 27 11	3420	88 5 17	3419	86 43 22	3419
2	Sun	W.	115 10 55	3440	116 32 26	3436	117 54 2	3432	119 15 42	3428
	Spica	W.	71 56 19	3063	73 25 13	3060	74 54 12	3056	76 23 16	3051
	Jupiter	W.	54 57 55	3116	56 25 45	3113	57 53 39	3110	59 21 37	3105
	Antares	W.	26 1 52	3065	27 30 44	3060	28 59 42	3056	30 28 45	3051
	Fomalhaut	E.	58 34 6	3322	57 10 20	3328	55 46 41	3334	54 23 9	3340
	α Pegasi	E.	79 53 49	3420	78 31 55	3420	77 10 1	3421	75 48 8	3421
3	Sun	W.	126 5 26	3400	127 27 43	3393	128 50 7	3386	130 12 39	3379
	Spica	W.	83 50 8	3023	85 19 52	3016	86 49 44	3009	88 19 45	3002
	Jupiter	W.	66 43 2	3076	68 11 40	3070	69 40 26	3063	71 9 21	3056
	Antares	W.	37 55 41	3022	39 25 27	3014	40 55 22	3007	42 25 26	3000
	Fomalhaut	E.	47 27 33	3385	46 4 59	3397	44 42 39	3411	43 20 34	3427
	α Pegasi	E.	68 58 54	3427	67 37 8	3429	66 15 24	3432	64 53 44	3435
	α Arietis	E.	110 21 26	3086	108 52 59	3078	107 24 23	3070	105 55 37	3062
4	Spica	W.	95 52 13	2962	97 23 14	2953	98 54 26	2944	100 25 50	2935
	Jupiter	W.	78 36 18	3014	80 6 12	3005	81 36 18	2996	83 6 35	2987
	Antares	W.	49 58 11	2958	51 29 16	2949	53 0 32	2940	54 32 0	2931
	Fomalhaut	E.	36 35 44	3551	35 16 16	3590	33 57 31	3634	32 39 33	3683
	α Pegasi	E.	58 6 35	3464	56 45 31	3473	55 24 37	3484	54 3 55	3497
	α Arietis	E.	98 29 11	3018	96 59 20	3009	95 29 18	2999	93 59 4	2989
	Saturn	E.	111 11 53	2966	109 40 58	2957	108 9 51	2948	106 38 33	2938
5	Spica	W.	108 5 50	2885	109 38 29	2875	111 11 20	2864	112 44 25	2853
	Jupiter	W.	90 41 4	2937	92 12 36	2927	93 44 21	2916	95 16 20	2905
	Antares	W.	62 12 23	2880	63 45 7	2870	65 18 4	2859	66 51 16	2848
	α Pegasi	E.	47 24 30	3589	46 5 43	3617	44 47 27	3649	43 29 46	3685
	α Arietis	E.	86 24 49	2939	84 53 20	2929	83 21 39	2919	81 49 44	2909
	Saturn	E.	98 58 55	2887	97 26 20	2876	95 53 31	2866	94 20 28	2855
	Aldebaran	E.	116 47 10	2938	115 15 40	2926	113 43 54	2914	112 11 53	2902
6	Jupiter	W.	102 59 44	2850	104 33 7	2838	106 6 45	2827	107 40 38	2816
	Antares	W.	74 40 42	2794	76 15 18	2782	77 50 9	2771	79 25 15	2760
	α Arietis	E.	74 6 54	2858	72 33 41	2848	71 0 15	2838	69 26 36	2828
	Saturn	E.	86 31 44	2800	84 57 16	2789	83 22 34	2778	81 47 37	2766
	Aldebaran	E.	104 28 0	2843	102 54 28	2831	101 20 40	2819	99 46 37	2808
7	Jupiter	W.	115 33 39	2761	117 8 59	2750	118 44 33	2739	120 20 22	2728
	Antares	W.	87 24 27	2704	89 1 2	2693	90 37 51	2682	92 14 55	2671
	α Arietis	E.	61 35 16	2782	60 0 24	2774	58 25 22	2766	56 50 9	2758
	Saturn	E.	73 49 11	2711	72 12 46	2700	70 36 6	2689	68 59 12	2679
	Aldebaran	E.	91 52 37	2751	90 17 4	2740	88 41 17	2729	87 5 16	2718
8	Antares	W.	100 23 52	2618	102 2 22	2608	103 41 6	2598	105 20 4	2588
	α Aquilæ	W.	57 0 19	3909	58 13 30	3854	59 27 37	3801	60 42 38	3751
	α Arietis	E.	48 51 41	2726	47 15 36	2722	45 39 26	2719	44 3 11	2716

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
8	SATURN	E.	67 22 4	2668	65 44 42	2658	64 7 5	2648	62 29 15	2638
	Aldebaran	E.	85 29 0	2708	83 52 30	2698	82 15 47	2687	80 38 50	2677
9	Antares	W.	106 59 16	2578	108 38 41	2569	110 18 19	2559	111 58 11	2550
	α Aquilæ	W.	61 58 31	3706	63 15 11	3664	64 32 36	3624	65 50 44	3587
	α Arietis	E.	42 26 52	2714	40 50 31	2715	39 14 11	2716	37 37 52	2719
	SATURN	E.	54 16 42	2590	52 37 33	2581	50 58 11	2572	49 18 37	2564
	Aldebaran	E.	72 30 47	2630	70 52 33	2622	69 14 8	2613	67 35 31	2605
	Pollux	E.	116 18 23	2578	114 38 58	2569	112 59 21	2559	111 19 30	2550
10	α Aquilæ	W.	72 30 40	3437	73 52 15	3413	75 14 17	3390	76 36 44	3369
	Fomalhaut	W.	40 25 47	2962	41 56 48	2925	43 28 35	2891	45 1 6	2859
	SATURN	E.	40 58 3	2526	39 17 26	2520	37 36 40	2514	35 55 45	2508
	Aldebaran	E.	59 19 53	2571	57 40 18	2565	56 0 35	2560	54 20 45	2555
	Pollux	E.	102 57 6	2505	101 16 0	2497	99 34 43	2489	97 53 14	2481
11	α Aquilæ	W.	83 34 20	3290	84 58 43	3280	86 23 18	3270	87 48 5	3261
	Fomalhaut	W.	52 52 43	2738	54 28 33	2718	56 4 49	2700	57 41 29	2684
	α Pegasi	W.	36 3 26	3602	37 21 58	3509	38 42 12	3424	40 4 1	3349
	Aldebaran	E.	46 0 9	2540	44 19 51	2540	42 39 33	2540	40 59 15	2541
	Pollux	E.	89 23 8	2444	87 40 36	2437	85 57 54	2431	84 15 3	2424
12	α Aquilæ	W.	94 53 55	3241	96 19 16	3241	97 44 37	3243	99 9 55	3246
	Fomalhaut	W.	65 49 56	2615	67 28 30	2604	69 7 19	2594	70 46 22	2584
	α Pegasi	W.	47 12 16	3071	48 41 1	3031	50 10 35	2993	51 40 56	2959
	Pollux	E.	75 38 31	2394	73 54 47	2389	72 10 56	2383	70 26 57	2378
	SUN	E.	132 11 47	2724	130 35 39	2718	128 59 23	2711	127 22 58	2705
13	α Aquilæ	W.	106 14 51	3288	107 39 17	3302	109 3 26	3319	110 27 15	3338
	Fomalhaut	W.	79 4 42	2545	80 44 53	2539	82 25 12	2533	84 5 40	2527
	α Pegasi	W.	59 22 17	2848	60 56 8	2808	62 30 25	2789	64 5 7	2772
	Pollux	E.	61 45 14	2355	60 0 34	2350	58 15 47	2346	56 30 54	2342
	SUN	E.	119 18 53	2677	117 41 42	2672	116 4 24	2667	114 27 0	2662
14	Fomalhaut	W.	92 29 40	2507	94 10 43	2505	95 51 49	2504	97 32 57	2502
	α Pegasi	W.	72 3 42	2705	73 40 15	2695	75 17 2	2686	76 54 2	2677
	α Arietis	W.	28 30 28	2581	30 9 49	2553	31 49 49	2527	33 30 25	2504
	Pollux	E.	47 45 7	2324	45 59 42	2320	44 14 12	2317	42 28 38	2314
	SUN	E.	106 18 26	2641	104 40 26	2637	103 2 22	2633	101 24 12	2629
15	Fomalhaut	W.	105 59 1	2501	107 40 13	2502	109 21 23	2504	111 2 30	2507
	α Pegasi	W.	85 1 28	2646	86 39 20	2643	88 17 16	2640	89 55 16	2638
	α Arietis	W.	42 0 0	2429	43 42 54	2418	45 26 4	2408	47 9 28	2399
	SATURN	W.	28 53 13	2335	30 38 22	2328	32 23 41	2322	34 9 9	2317
	Pollux	E.	33 39 48	2302	31 53 51	2300	30 7 52	2299	28 21 50	2298
	SUN	E.	93 12 13	2614	91 33 37	2611	89 54 57	2609	88 16 14	2606
16	α Pegasi	W.	98 5 45	2638	99 43 49	2640	101 21 49	2643	102 59 45	2648
	α Arietis	W.	55 49 12	2366	57 33 35	2361	59 18 4	2357	61 2 40	2353
	SATURN	W.	42 58 13	2296	44 44 18	2293	46 30 28	2291	48 16 41	2288
	Aldebaran	W.	25 54 50	2531	27 35 20	2503	29 16 29	2479	30 58 12	2458
	SUN	E.	80 1 51	2596	78 22 51	2595	76 43 49	2593	75 4 45	2592

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
8	SATURN	E.	60 51 11	2628	59 12 53	2618	57 34 23	2608	55 55 39	2599
	Aldebaran	E.	79 1 39	2667	77 24 15	2658	75 46 38	2649	74 8 49	2639
9	Antares	W.	113 38 15	2540	115 18 32	2531	116 59 2	2522	118 39 42	2513
	α Aquilæ	W.	67 9 32	3553	68 28 57	3520	69 48 59	3490	71 9 34	3463
	α Arietis	E.	36 1 38	2724	34 25 31	2732	32 49 34	2742	31 13 50	2754
	SATURN	E.	47 38 52	2556	45 58 55	2548	44 18 48	2540	42 38 30	2533
	Aldebaran	E.	65 56 43	2598	64 17 45	2591	62 38 37	2584	60 59 19	2577
	Pollux	E.	109 39 26	2541	107 59 10	2532	106 18 41	2523	104 38 0	2514
10	α Aquilæ	W.	77 59 36	3351	79 22 49	3334	80 46 21	3318	82 10 12	3303
	Fomalhaut	W.	46 34 17	2831	48 8 4	2805	49 42 26	2780	51 17 20	2758
	SATURN	E.	34 14 43	2503	32 33 34	2499	30 52 20	2496	29 11 1	2494
	Aldebaran	E.	52 40 48	2551	51 0 45	2547	49 20 37	2544	47 40 25	2541
	Pollux	E.	96 11 34	2473	94 29 43	2466	92 47 42	2458	91 5 30	2451
11	α Aquilæ	W.	89 13 2	3254	90 38 7	3248	92 3 19	3244	93 28 36	3242
	Fomalhaut	W.	59 18 31	2668	60 55 54	2653	62 33 37	2640	64 11 38	2627
	α Pegasi	W.	41 27 16	3281	42 51 50	3220	44 17 35	3165	45 44 26	3116
	Aldebaran	E.	39 18 59	2544	37 38 47	2548	35 58 41	2554	34 18 44	2561
	Pollux	E.	82 32 2	2417	80 48 52	2411	79 5 34	2405	77 22 7	2399
12	α Aquilæ	W.	100 35 10	3251	102 0 19	3258	103 25 20	3266	104 50 11	3276
	Fomalhaut	W.	72 25 39	2575	74 5 8	2567	75 44 49	2559	77 24 40	2552
	α Pegasi	W.	53 12 0	2928	54 43 43	2900	56 16 2	2874	57 48 54	2850
	Pollux	E.	68 42 50	2373	66 58 36	2368	65 14 16	2363	63 29 48	2359
	SUN	E.	125 46 25	2699	124 9 43	2693	122 32 54	2687	120 55 57	2682
13	α Aquilæ	W.	111 50 43	3359	113 13 47	3383	114 36 23	3409	115 58 29	3438
	Fomalhaut	W.	85 46 15	2522	87 26 57	2517	89 7 46	2513	90 48 41	2510
	α Pegasi	W.	65 40 12	2756	67 15 37	2742	68 51 21	2729	70 27 23	2716
	Pollux	E.	54 45 56	2338	53 0 52	2334	51 15 42	2331	49 30 27	2327
	SUN	E.	112 49 29	2657	111 11 52	2653	109 34 9	2649	107 56 20	2645
14	Fomalhaut	W.	99 14 7	2502	100 55 19	2500	102 36 33	2499	104 17 47	2500
	α Pegasi	W.	78 31 13	2669	80 8 34	2663	81 46 4	2657	83 23 42	2651
	α Arietis	W.	35 11 32	2485	36 53 6	2468	38 35 4	2453	40 17 23	2441
	Pollux	E.	40 42 59	2312	38 57 16	2310	37 11 31	2307	35 25 41	2304
	SUN	E.	99 45 57	2626	98 7 38	2623	96 29 14	2620	94 50 46	2617
15	Fomalhaut	W.	112 43 33	2511	114 24 31	2516	116 5 22	2521	117 46 6	2526
	α Pegasi	W.	91 33 20	2636	93 11 26	2636	94 49 32	2635	96 27 39	2636
	α Arietis	W.	48 53 5	2391	50 36 53	2384	52 20 50	2378	54 4 57	2372
	SATURN	W.	35 54 44	2312	37 40 27	2307	39 26 16	2303	41 12 12	2299
	Pollux	E.	26 35 47	2297	24 49 43	2296	23 3 37	2295	21 17 30	2295
	SUN	E.	86 37 27	2604	84 58 37	2602	83 19 45	2600	81 40 49	2598
16	α Pegasi	W.	104 37 35	2653	106 15 18	2659	107 52 53	2666	109 30 19	2674
	α Arietis	W.	62 47 22	2350	64 32 8	2347	66 16 59	2345	68 1 53	2343
	SATURN	W.	50 2 58	2286	51 49 18	2285	53 35 40	2283	55 22 5	2282
	Aldebaran	W.	32 40 25	2440	34 23 3	2424	36 6 3	2412	37 49 21	2401
	SUN	E.	73 25 40	2591	71 46 33	2591	70 7 25	2590	68 28 16	2589

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
17	α Arietis	W.	69 46 51	2341	71 31 51	2339	73 16 53	2338	75 1 57	2337
	Saturn	W.	57 8 31	2281	58 54 59	2281	60 41 27	2280	62 27 56	2280
	Aldebaran	W.	39 32 54	2391	41 16 41	2383	43 0 40	2376	44 44 49	2371
	Sun	E.	66 49 6	2589	65 9 56	2590	63 30 47	2590	61 51 38	2591
18	α Arietis	W.	83 47 21	2339	85 32 23	2341	87 17 23	2343	89 2 20	2345
	Saturn	W.	71 20 17	2283	73 6 42	2285	74 53 4	2286	76 39 24	2288
	Aldebaran	W.	53 27 14	2354	55 11 55	2353	56 56 38	2352	58 41 23	2351
	Sun	E.	53 36 13	2598	51 57 14	2600	50 18 19	2602	48 39 27	2605
19	α Arietis	W.	97 46 7	2362	99 30 37	2367	101 14 59	2372	102 59 14	2377
	Saturn	W.	85 30 9	2303	87 16 4	2307	89 1 53	2311	90 47 36	2316
	Aldebaran	W.	67 24 56	2357	69 9 31	2360	70 54 3	2363	72 38 30	2367
	Sun	E.	40 26 17	2625	38 47 56	2630	37 9 43	2636	35 31 37	2643
24	Sun	W.	23 8 5	3057	24 37 7	3068	26 5 55	3080	27 34 29	3092
	α Aquilæ	E.	95 50 12	3534	94 30 25	3544	93 10 49	3555	91 51 25	3566
25	Sun	W.	34 53 31	3156	36 20 33	3169	37 47 19	3181	39 13 51	3194
	α Aquilæ	E.	85 18 1	3641	84 0 11	3659	82 42 40	3678	81 25 30	3697
	Fomalhaut	E.	114 21 7	3014	112 51 11	3022	111 21 25	3030	109 51 49	3039
26	Sun	W.	46 22 40	3257	47 47 42	3269	49 12 30	3281	50 37 4	3292
	α Aquilæ	E.	75 5 12	3812	73 50 22	3838	72 35 59	3865	71 22 4	3894
	Fomalhaut	E.	102 26 31	3083	100 58 1	3092	99 29 42	3102	98 1 35	3111
	α Pegasi	E.	122 5 26	3381	120 42 48	3379	119 20 7	3376	117 57 23	3374
27	Sun	W.	57 36 41	3345	59 0 1	3354	60 23 10	3363	61 46 8	3372
	Jupiter	W.	17 1 26	3069	18 30 14	3075	19 58 54	3081	21 27 27	3087
	α Aquilæ	E.	65 20 6	4056	64 9 22	4093	62 59 14	4134	61 49 45	4175
	Fomalhaut	E.	90 43 50	3158	89 16 50	3167	87 50 2	3176	86 23 24	3184
	α Pegasi	E.	111 3 22	3373	109 40 35	3375	108 17 50	3377	106 55 6	3379
28	Sun	W.	68 38 39	3409	70 0 44	3415	71 22 43	3421	72 44 35	3426
	Jupiter	W.	28 48 27	3114	30 16 20	3119	31 44 6	3124	33 11 46	3128
	α Aquilæ	E.	56 12 44	4418	55 7 39	4476	54 3 26	4538	53 0 7	4603
	Fomalhaut	E.	79 12 48	3226	77 47 10	3234	76 21 42	3242	74 56 23	3250
	α Pegasi	E.	100 2 9	3392	98 39 43	3395	97 17 21	3397	95 55 1	3400
29	Sun	W.	79 32 41	3445	80 54 7	3447	82 15 30	3448	83 36 52	3450
	Jupiter	W.	40 29 0	3143	41 56 17	3145	43 23 31	3147	44 50 44	3148
	Antares	W.	16 10 5	3080	17 38 39	3081	19 7 12	3081	20 35 45	3081
	Fomalhaut	E.	67 52 0	3286	66 27 32	3293	65 3 13	3300	63 39 2	3307
	α Pegasi	E.	89 4 14	3415	87 42 14	3418	86 20 18	3421	84 58 25	3423
30	Sun	W.	90 23 33	3447	91 44 56	3445	93 6 22	3442	94 27 50	3439
	Jupiter	W.	52 6 45	3145	53 34 0	3143	55 1 18	3140	56 28 39	3137
	Antares	W.	27 58 44	3074	29 27 25	3072	30 56 9	3069	32 24 57	3065
	Fomalhaut	E.	56 40 11	3345	55 16 51	3353	53 53 40	3361	52 30 39	3370
	α Pegasi	E.	78 9 41	3436	76 48 5	3438	75 26 32	3441	74 5 2	3444
	α Arietis	E.	120 10 32	3147	118 43 19	3143	117 16 2	3138	115 48 39	3134

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
17	α Arietis	W.	76 47 2	2337	78 32 7	2337	80 17 12	2337	82 2 17	2337
	Saturn	W.	64 14 25	2280	66 0 54	2280	67 47 23	2281	69 33 51	2282
	Aldebaran	W.	46 29 6	2366	48 13 30	2362	49 58 0	2358	51 42 35	2355
	Sun	E.	60 12 30	2592	58 33 23	2593	56 54 18	2594	55 15 14	2596
18	α Arietis	W.	90 47 14	2348	92 32 4	2351	94 16 50	2354	96 1 31	2357
	Saturn	W.	78 25 41	2291	80 11 54	2293	81 58 4	2296	83 44 9	2300
	Aldebaran	W.	60 26 8	2352	62 10 52	2353	63 55 35	2354	65 40 17	2355
	Sun	E.	47 0 39	2609	45 21 56	2612	43 43 17	2616	42 4 44	2621
19	α Arietis	W.	104 43 22	2383	106 27 21	2390	108 11 10	2397	109 54 49	2403
	Saturn	W.	92 33 12	2321	94 18 41	2326	96 4 2	2331	97 49 16	2337
	Aldebaran	W.	74 22 52	2371	76 7 8	2376	77 51 17	2380	79 35 19	2385
	Sun	E.	33 53 40	2650	32 15 52	2657	30 38 14	2665	29 0 47	2673
24	Sun	W.	29 2 48	3105	30 30 52	3118	31 58 40	3130	33 26 13	3143
	α Aquilæ	E.	90 32 14	3579	89 13 17	3593	87 54 35	3608	86 36 9	3624
25	Sun	W.	40 40 7	3207	42 6 8	3220	43 31 53	3232	44 57 24	3245
	α Aquilæ	E.	80 8 40	3718	78 52 12	3741	77 36 8	3764	76 20 28	3787
	Fomalhaut	E.	108 22 24	3047	106 53 10	3056	105 24 6	3065	103 55 13	3074
26	Sun	W.	52 1 25	3303	53 25 32	3314	54 49 27	3325	56 13 10	3335
	α Aquilæ	E.	70 8 38	3923	68 55 42	3954	67 43 17	3987	66 31 25	4021
	Fomalhaut	E.	96 33 39	3121	95 5 55	3130	93 38 22	3139	92 11 0	3149
	α Pegasi	E.	116 34 37	3373	115 11 49	3372	113 49 0	3372	112 26 11	3372
27	Sun	W.	63 8 57	3380	64 31 36	3388	65 54 5	3396	67 16 26	3403
	Jupiter	W.	22 55 52	3093	24 24 10	3098	25 52 22	3103	27 20 28	3109
	α Aquilæ	E.	60 40 55	4218	59 32 46	4264	58 25 20	4313	57 18 39	4363
	Fomalhaut	E.	84 56 56	3193	83 30 39	3202	82 4 32	3210	80 38 35	3218
	α Pegasi	E.	105 32 25	3381	104 9 47	3383	102 47 11	3386	101 24 38	3389
28	Sun	W.	74 6 22	3431	75 28 3	3435	76 49 40	3439	78 11 12	3442
	Jupiter	W.	34 39 21	3132	36 6 52	3135	37 34 18	3138	39 1 41	3141
	α Aquilæ	E.	51 57 45	4673	50 56 23	4748	49 56 4	4830	48 56 52	4918
	Fomalhaut	E.	73 31 13	3258	72 6 12	3265	70 41 20	3272	69 16 36	3279
	α Pegasi	E.	94 32 45	3403	93 10 32	3406	91 48 23	3409	90 26 17	3412
29	Sun	W.	84 58 12	3451	86 19 31	3450	87 40 51	3449	89 2 11	3448
	Jupiter	W.	46 17 56	3148	47 45 7	3148	49 12 19	3147	50 39 31	3146
	Antares	W.	22 4 18	3080	23 32 52	3079	25 1 28	3078	26 30 5	3076
	Fomalhaut	E.	62 14 59	3314	60 51 4	3322	59 27 18	3329	58 3 40	3337
	α Pegasi	E.	83 36 34	3426	82 14 46	3429	80 53 2	3431	79 31 20	3433
30	Sun	W.	95 49 22	3436	97 10 58	3432	98 32 39	3427	99 54 25	3421
	Jupiter	W.	57 56 4	3133	59 23 33	3129	60 51 7	3125	62 18 46	3120
	Antares	W.	33 53 49	3061	35 22 46	3057	36 51 47	3053	38 20 54	3048
	Fomalhaut	E.	51 7 49	3380	49 45 10	3391	48 22 43	3403	47 0 29	3415
	α Pegasi	E.	72 43 35	3447	71 22 11	3450	70 0 51	3453	68 39 34	3456
	α Arietis	E.	114 21 11	3129	112 53 37	3124	111 25 56	3118	109 58 8	3111

AT GREENWICH APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Semi-diameter.	Sidereal Time of Semi-diameter Passing Meridian.	Equation of Time, to be Subtracted from Apparent Time.	Diff. for 1 Hour.
		h m s	s	° ′ ″	″	′ ″	s	m s	s
SUN.	1	12 26 22.22	+9.043	S. 2 51 5.6	−58.32	16 0.58	64.28	10 0.45	0.811
Mon.	2	12 29 59.39	9.054	3 14 24.2	58.23	16 0.86	64.32	10 19.78	0.800
Tues.	3	12 33 36.84	9.066	3 37 40.6	58.13	16 1.15	64.37	10 38.84	0.788
Wed.	4	12 37 14.58	+9.079	4 0 54.4	−58.02	16 1.44	64.42	10 57.60	0.775
Thur.	5	12 40 52.64	9.093	4 24 5.2	57.89	16 1.72	64.47	11 16.04	0.761
Frid.	6	12 44 31.05	9.108	4 47 12.8	57.74	16 2.00	64.52	11 34.13	0.746
Sat.	7	12 48 9.83	+9.124	5 10 16.9	−57.59	16 2.28	64.58	11 51.85	0.730
SUN.	8	12 51 49.00	9.141	5 33 17.0	57.42	16 2.55	64.64	12 9.19	0.714
Mon.	9	12 55 28.59	9.158	5 56 12.9	57.23	16 2.82	64.70	12 26.11	0.696
Tues.	10	12 59 8.61	+9.177	6 19 4.2	−57.03	16 3.10	64.76	12 42.60	0.678
Wed.	11	13 2 49.09	9.197	6 41 50.5	56.82	16 3.38	64.83	12 58.63	0.658
Thur.	12	13 6 30.05	9.217	7 4 31.6	56.60	16 3.65	64.90	13 14.18	0.637
Frid.	13	13 10 11.52	+9.239	7 27 7.1	−56.36	16 3.92	64.97	13 29.23	0.616
Sat.	14	13 13 53.52	9.261	7 49 36.6	56.10	16 4.18	65.05	13 43.75	0.594
SUN.	15	13 17 36.06	9.284	8 11 59.8	55.83	16 4.45	65.13	13 57.72	0.570
Mon.	16	13 21 19.17	+9.308	8 34 16.2	−55.54	16 4.72	65.21	14 11.12	0.546
Tues.	17	13 25 2.86	9.333	8 56 25.5	55.23	16 5.00	65.29	14 23.95	0.522
Wed.	18	13 28 47.15	9.358	9 18 27.3	54.91	16 5.27	65.38	14 36.18	0.497
Thur.	19	13 32 32.05	+9.384	9 40 21.2	−54.57	16 5.54	65.47	14 47.80	0.471
Frid.	20	13 36 17.57	9.410	10 2 6.8	54.22	16 5.80	65.56	14 58.80	0.445
Sat.	21	13 40 3.73	9.437	10 23 43.6	53.85	16 6.06	65.65	15 9.17	0.418
SUN.	22	13 43 50.55	+9.464	10 45 11.2	−53.46	16 6.33	65.74	15 18.88	0.391
Mon.	23	13 47 38.03	9.492	11 6 29.3	53.05	16 6.60	65.84	15 27.93	0.363
Tues.	24	13 51 26.19	9.521	11 27 37.3	52.62	16 6.87	65.94	15 36.30	0.334
Wed.	25	13 55 15.04	+9.550	11 48 34.8	−52.17	16 7.14	66.04	15 43.99	0.305
Thur.	26	13 59 4.58	9.579	12 9 21.5	51.71	16 7.41	66.15	15 50.98	0.276
Frid.	27	14 2 54.83	9.609	12 29 56.9	51.23	16 7.68	66.25	15 57.27	0.247
Sat.	28	14 6 45.80	+9.639	12 50 20.6	−50.74	16 7.94	66.36	16 2.84	0.217
SUN.	29	14 10 37.50	9.670	13 10 32.2	50.23	16 8.20	66.47	16 7.68	0.186
Mon.	30	14 14 29.95	9.701	13 30 31.3	49.70	16 8.46	66.58	16 11.77	0.155
Tues.	31	14 18 23.16	9.733	13 50 17.6	49.15	16 8.73	66.69	16 15.11	0.123
Wed.	32	14 22 17.14	+9.765	S. 14 9 50.5	−48.59	16 9.00	66.80	16 17.68	0.091

NOTE.—The mean time of semidiameter passing the meridian may be found by subtracting 0s.18 from the sidereal time.
The sign − prefixed to the hourly change of declination indicates that south declinations are increasing.

AT GREENWICH MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Equation of Time, to be Added to Mean Time.	Diff. for 1 Hour.	Sidereal Time, or Right Ascension of Mean Sun.
		h m s	s	° ′ ″	″	m s	s	h m s
SUN.	1	12 36 23.73	+9.045	S. 2 51 15.4	−58.33	10 0.58	+0.811	12 36 24.31
Mon.	2	12 30 0.95	9.056	3 14 34.3	58.24	10 19.92	0.800	12 40 20.87
Tues.	3	12 33 38.44	9.068	3 37 50.9	58.14	10 38.98	0.788	12 44 17.42
Wed.	4	12 37 16.23	+9.081	4 1 5.0	−58.03	10 57.74	+0.775	12 48 13.97
Thur.	5	12 40 54.34	9.095	4 24 16.1	57.90	11 16.18	0.761	12 52 10.53
Frid.	6	12 44 32.80	9.110	4 47 24.0	57.76	11 34.28	0.746	12 56 7.08
Sat.	7	12 48 11.64	+9.126	5 10 28.3	−57.60	11 52.00	+0.730	13 0 3.64
SUN.	8	12 51 50.86	9.143	5 33 28.6	57.43	12 9.33	0.714	13 4 0.19
Mon.	9	12 55 30.49	9.160	5 56 24.7	57.24	12 26.26	0.696	13 7 56.74
Tues.	10	12 59 10.55	+9.179	6 19 16.2	−57.04	12 42.75	+0.678	13 11 53.30
Wed.	11	13 2 51.07	9.199	6 42 2.8	56.83	12 58.78	0.658	13 15 49.85
Thur.	12	13 6 32.08	9.219	7 4 44.1	56.60	13 14.32	0.637	13 19 46.40
Frid.	13	13 10 13.59	+9.241	7 27 19.7	−56.36	13 29.36	+0.616	13 23 42.96
Sat.	14	13 13 55.63	9.263	7 49 49.4	56.10	13 43.88	0.594	13 27 39.51
SUN.	15	13 17 38.22	9.286	8 12 12.8	55.83	13 57.85	0.570	13 31 36.07
Mon.	16	13 21 21.37	+9.310	8 34 29.4	−55.54	14 11.25	+0.546	13 35 32.62
Tues.	17	13 25 5.10	9.334	8 56 38.8	55.24	14 24.08	0.522	13 39 29.18
Wed.	18	13 28 49.42	9.360	9 18 40.7	54.92	14 36.31	0.497	13 43 25.73
Thur.	19	13 32 34.36	+9.386	9 40 34.7	−54.58	14 47.92	+0.471	13 47 22.28
Frid.	20	13 36 19.92	9.412	10 2 20.3	54.22	14 58.91	0.445	13 51 18.84
Sat.	21	13 40 6.12	9.438	10 23 57.2	53.85	15 9.27	0.418	13 55 15.39
SUN.	22	13 43 52.97	+9.466	10 45 24.9	−53.46	15 18.98	+0.391	13 59 11.95
Mon.	23	13 47 40.48	9.494	11 6 42.9	53.05	15 28.02	0.363	14 3 8.50
Tues.	24	13 51 28.67	9.522	11 27 50.9	52.62	15 36.39	0.334	14 7 5.06
Wed.	25	13 55 17.54	+9.551	11 48 48.5	−52.17	15 44.07	+0.305	14 11 1.61
Thur.	26	13 59 7.11	9.580	12 9 35.2	51.71	15 51.06	0.276	14 14 58.17
Frid.	27	14 2 57.38	9.610	12 30 10.5	51.23	15 57.34	0.247	14 18 54.72
Sat.	28	14 6 48.37	+9.640	12 50 34.1	−50.73	16 2.90	+0.217	14 22 51.28
SUN.	29	14 10 40.10	9.671	13 10 45.7	50.22	16 7.73	0.186	14 26 47.83
Mon.	30	14 14 32.57	9.702	13 30 44.8	49.69	16 11.82	0.155	14 30 44.39
Tues.	31	14 18 25.80	9.734	13 50 30.9	49.15	16 15.15	0.123	14 34 40.94
Wed.	32	14 22 19.79	+9.766	S. 14 10 3.7	−48.59	16 17.71	+0.091	14 38 37.50

NOTE.—The semidiameter for mean noon may be assumed the same as that for apparent noon.
The sign − prefixed to the hourly change of declination indicates that south declinations are increasing.

Diff. for 1 Hour, +9s.8565. (Table III.)

AT GREENWICH MEAN NOON.

Day of the Month.	Day of the Year.	THE SUN'S TRUE LONGITUDE. λ	THE SUN'S TRUE LONGITUDE. λ'	Diff. for 1 Hour.	THE SUN'S LATITUDE.	Logarithm of the Radius Vector of the Earth.	Diff. for 1 Hour.	Mean Time of Sidereal Noon.
		° ′ ″	′ ″	″	″			h m s
1	274	187 11 34.4	11 6.2	147.53	− 0.32	0.000 4132	− 53.1	11 21 43.70
2	275	188 10 36.0	10 7.7	147.60	0.33	0.000 2857	53.1	11 17 47.79
3	276	189 9 39.4	9 11.0	147.68	0.30	0.000 1582	53.1	11 13 51.88
4	277	190 8 44.6	8 16.1	147.76	− 0.26	0.000 0309	− 53.0	11 9 55.97
5	278	191 7 51.7	7 23.1	147.83	0.18	9.999 9039	52.8	11 6 0.06
6	279	192 7 0.7	6 32.0	147.91	− 0.08	9.999 7773	52.6	11 2 4.16
7	280	193 6 11.6	5 42.8	148.00	+ 0.05	9.999 6513	− 52.4	10 58 8.25
8	281	194 5 24.5	4 55.6	148.08	0.19	9.999 5260	52.1	10 54 12.34
9	282	195 4 39.5	3 10.5	148.17	0.33	9.999 4014	51.8	10 50 16.43
10	283	196 3 56.6	3 27.5	148.26	+ 0.46	9.999 2774	− 51.5	10 46 20.53
11	284	197 3 16.0	2 46.7	148.35	0.61	9.999 1541	51.2	10 42 24.62
12	285	198 2 37.6	2 8.2	148.45	0.72	9.999 0315	50.9	10 38 28.71
13	286	199 2 1.6	1 32.1	148.55	+ 0.82	9.998 9095	− 50.7	10 34 32.80
14	287	200 1 27.9	0 58.3	148.64	0.88	9.998 7880	50.6	10 30 36.89
15	288	201 0 56.6	0 26.8	148.74	0.92	9.998 6668	50.5	10 26 40.98
16	289	201 60 27.6	59 57.7	148.84	+ 0.92	9.998 5459	− 50.4	10 22 45.08
17	290	202 60 0.9	59 30.9	148.94	0.89	9.998 4251	50.3	10 18 49.17
18	291	203 59 36.5	59 6.4	149.03	0.83	9.998 3044	50.3	10 14 53.26
19	292	204 59 14.4	58 44.1	149.12	+ 0.74	9.998 1837	− 50.3	10 10 57.35
20	293	205 58 54.4	58 24.0	149.21	0.63	9.998 0630	50.3	10 7 1.44
21	294	206 58 36.5	58 6.1	149.30	0.50	9.997 9422	50.4	10 3 5.53
22	295	207 58 20.7	57 50.2	149.38	+ 0.37	9.997 8213	− 50.4	9 59 9.62
23	296	208 58 6.9	57 36.2	149.46	0.24	9.997 7005	50.3	9 55 13.72
24	297	209 57 55.0	57 24.1	149.54	0.11	9.997 5798	50.3	9 51 17.81
25	298	210 57 44.9	57 13.9	149.62	+ 0.01	9.997 4592	− 50.2	9 47 21.90
26	299	211 57 36.6	57 5.5	149.69	− 0.08	9.997 3389	50.1	9 43 25.99
27	300	212 57 30.1	56 58.9	149.76	0.16	9.997 2189	49.9	9 39 30.08
28	301	213 57 25.3	56 54.0	149.84	− 0.19	9.997 0995	− 49.6	9 35 34.17
29	302	214 57 22.2	56 50.7	149.91	0.21	9.996 9808	49.3	9 31 38.26
30	303	215 57 20.8	56 49.1	149.97	0.20	9.996 8628	49.0	9 27 42.35
31	304	216 57 21.0	56 49.1	150.04	0.15	9.996 7457	48.6	9 23 46.44
32	305	217 57 22.8	56 50.8	150.11	− 0.09	9.996 6296	− 48.1	9 19 50.53

NOTE.—The longitudes in the column λ are referred to the true equinox of their own date, while those in the column λ' are referred to the mean equinox of the beginning of the Besselian fictitious year.

Diff. for 1 Hour, −9ˢ.8296. (Table II.)

GREENWICH MEAN TIME.

THE MOON'S

Day of the Month.	SEMIDIAMETER. Noon.	SEMIDIAMETER. Midnight.	HORIZONTAL PARALLAX. Noon.	Diff. for 1 Hour.	HORIZONTAL PARALLAX. Midnight.	Diff. for 1 Hour.	UPPER TRANSIT. Meridian of Greenwich.	Diff. for 1 Hour.	AGE. Noon.
	′ ″	′ ″	′ ″	″	′ ″	″	h m	m	d
1	14 51.0	14 53.3	54 24.2	+0.60	54 32.7	+0.81	7 1.3	2.11	8.9
2	14 56.3	14 59.9	54 43.6	1.01	54 56.8	1.19	7 51.2	2.05	9.9
3	15 4.1	15 8.7	55 12.1	1.35	55 29.2	1.49	8 39.6	1.98	10.9
4	15 13.8	15 19.2	55 47.8	+1.60	56 7.7	+1.69	9 26.2	1.91	11.9
5	15 24.9	15 30.7	56 28.5	1.75	56 49.8	1.78	10 11.6	1.87	12.9
6	15 36.5	15 42.2	57 11.2	1.77	57 32.2	1.72	10 56.5	1.87	13.9
7	15 47.8	15 53.0	57 52.5	+1.65	58 11.7	+1.54	11 42.0	1.93	14.9
8	15 57.8	16 2.1	58 29.4	1.40	58 45.3	1.24	12 29.2	2.02	15.9
9	16 5.9	16 9.1	58 59.1	1.06	59 10.7	0.87	13 19.3	2.16	16.9
10	16 11.6	16 13.5	59 19.9	+0.67	59 26.8	+0.48	14 13.4	2.34	17.9
11	16 14.7	16 15.3	59 31.3	+0.29	59 33.5	+0.10	15 11.7	2.52	18.9
12	16 15.3	16 14.8	59 33.6	−0.08	59 31.8	−0.23	16 13.5	2.63	19.9
13	16 13.8	16 12.5	59 28.2	−0.36	59 23.1	−0.48	17 16.7	2.63	20.9
14	16 10.7	16 8.6	59 16.6	0.59	59 9.0	0.68	18 18.5	2.52	21.9
15	16 6.3	16 3.7	59 0.4	0.75	58 50.9	0.82	19 16.9	2.34	22.9
16	16 0.9	15 57.9	58 40.7	−0.88	58 29.7	−0.94	20 10.8	2.16	23.9
17	15 54.7	15 51.4	58 18.1	0.99	58 5.9	1.04	21 0.6	2.00	24.9
18	15 47.9	15 44.3	57 53.1	1.09	57 39.7	1.14	21 47.1	1.88	25.9
19	15 40.5	15 36.6	57 25.8	−1.18	57 11.4	−1.22	22 31.6	1.83	26.9
20	15 32.5	15 28.4	56 56.5	1.25	56 41.3	1.28	23 15.3	1.82	27.9
21	15 24.2	15 19.9	56 25.8	1.30	56 10.2	1.30	23 59.2	1.85	28.9
22	15 15.7	15 11.5	55 54.7	−1.28	55 39.4	−1.25	ó	. .	0.3
23	15 7.5	15 3.6	55 24.6	1.21	55 10.4	1.14	0 44.2	1.90	1.3
24	15 0.0	14 56.7	54 57.2	1.05	54 45.1	0.95	1 30.9	1.99	2.3
25	14 53.8	14 51.3	54 34.4	−0.82	54 25.3	−0.68	2 19.7	2.07	3.3
26	14 49.3	14 47.8	54 17.9	0.53	54 12.5	−0.36	3 10.1	2.13	4.3
27	14 46.9	14 46.7	54 9.3	−0.17	54 8.4	+0.02	4 1.4	2.14	5.3
28	14 47.1	14 48.2	54 9.9	+0.23	54 14.0	+0.45	4 52.6	2.12	6.3
29	14 50.1	14 52.6	54 20.7	0.66	54 29.9	0.88	5 42.7	2.05	7.3
30	14 55.8	14 59.7	54 41.7	1.09	54 56.1	1.30	6 31.0	1.98	8.3
31	15 4.3	15 9.5	55 12.9	1.50	55 32.0	1.68	7 17.5	1.90	9.3
32	15 15.2	15 21.5	55 53.2	+1.84	56 16.1	+1.97	8 2.5	1.85	10.3

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 1.			
	h m s	s	° ′ ″	″
0	19 23 18.39	2.2161	S. 27 14 13.9	3.638
1	19 25 31.31	2.2145	27 10 31.6	3.771
2	19 27 44.13	2.2129	27 6 41.4	3.903
3	19 29 56.86	2.2113	27 2 43.3	4.034
4	19 32 9.49	2.2096	26 58 37.3	4.165
5	19 34 22.01	2.2078	26 54 23.5	4.296
6	19 36 34.43	2.2061	26 50 1.8	4.427
7	19 38 46.74	2.2042	26 45 32.3	4.557
8	19 40 58.93	2.2023	26 40 55.0	4.687
9	19 43 11.01	2.2003	26 36 9.9	4.817
10	19 45 22.97	2.1983	26 31 17.0	4.946
11	19 47 34.81	2.1963	26 26 16.4	5.075
12	19 49 46.53	2.1943	26 21 8.0	5.203
13	19 51 58.12	2.1922	26 15 52.0	5.331
14	19 54 9.59	2.1900	26 10 28.3	5.459
15	19 56 20.92	2.1878	26 4 56.9	5.587
16	19 58 32.12	2.1856	25 59 17.9	5.713
17	20 0 43.19	2.1833	25 53 31.4	5.838
18	20 2 54.12	2.1810	25 47 37.3	5.965
19	20 5 4.91	2.1787	25 41 35.6	6.091
20	20 7 15.56	2.1763	25 35 26.4	6.216
21	20 9 26.06	2.1738	25 29 9.7	6.340
22	20 11 36.42	2.1714	25 22 45.6	6.464
23	20 13 46.63	2.1689	S. 25 16 14.0	6.588
	MONDAY 2.			
0	20 15 56.69	2.1664	S. 25 9 35.1	6.710
1	20 18 6.60	2.1639	25 2 48.8	6.833
2	20 20 16.36	2.1614	24 55 55.1	6.956
3	20 22 25.97	2.1588	24 48 54.1	7.077
4	20 24 35.42	2.1562	24 41 45.9	7.198
5	20 26 44.71	2.1536	24 34 30.4	7.318
6	20 28 53.85	2.1510	24 27 7.7	7.438
7	20 31 2.83	2.1483	24 19 37.8	7.558
8	20 33 11.65	2.1457	24 12 0.8	7.676
9	20 35 20.31	2.1429	24 4 16.7	7.794
10	20 37 28.80	2.1402	23 56 25.5	7.913
11	20 39 37.13	2.1375	23 48 27.2	8.029
12	20 41 45.30	2.1348	23 40 22.0	8.145
13	20 43 53.30	2.1320	23 32 9.8	8.262
14	20 46 1.14	2.1293	23 23 50.6	8.378
15	20 48 8.81	2.1265	23 15 24.5	8.492
16	20 50 16.32	2.1238	23 6 51.6	8.605
17	20 52 23.66	2.1209	22 58 11.9	8.719
18	20 54 30.83	2.1181	22 49 25.3	8.833
19	20 56 37.83	2.1153	22 40 32.0	8.945
20	20 58 44.67	2.1126	22 31 31.9	9.057
21	21 0 51.34	2.1098	22 22 25.2	9.168
22	21 2 57.84	2.1069	22 13 11.8	9.278
23	21 5 4.17	2.1042	22 3 51.9	9.387
24	21 7 10.34	2.1014	S. 21 54 25.4	9.496

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 3.			
	h m s	s	° ′ ″	″
0	21 7 10.34	2.1014	S. 21 54 25.4	9.496
1	21 9 16.34	2.0986	21 44 52.4	9.604
2	21 11 22.17	2.0958	21 35 12.9	9.712
3	21 13 27.83	2.0930	21 25 27.0	9.818
4	21 15 33.33	2.0903	21 15 34.7	9.925
5	21 17 38.66	2.0875	21 5 36.0	10.031
6	21 19 43.83	2.0848	20 55 31.0	10.136
7	21 21 48.83	2.0820	20 45 19.7	10.240
8	21 23 53.67	2.0793	20 35 2.2	10.343
9	21 25 58.34	2.0765	20 24 38.5	10.446
10	21 28 2.85	2.0739	20 14 8.7	10.548
11	21 30 7.21	2.0713	20 3 32.8	10.649
12	21 32 11.40	2.0685	19 52 50.8	10.750
13	21 34 15.43	2.0659	19 42 2.8	10.849
14	21 36 19.31	2.0633	19 31 8.9	10.948
15	21 38 23.03	2.0607	19 20 9.0	11.047
16	21 40 26.59	2.0581	19 9 3.2	11.145
17	21 42 30.00	2.0556	18 57 51.6	11.242
18	21 44 33.26	2.0530	18 46 34.2	11.338
19	21 46 36.36	2.0504	18 35 11.1	11.433
20	21 48 39.31	2.0480	18 23 42.3	11.528
21	21 50 42.12	2.0456	18 12 7.8	11.622
22	21 52 44.78	2.0432	18 0 27.7	11.714
23	21 54 47.30	2.0408	S. 17 48 42.1	11.806
	WEDNESDAY 4.			
0	21 56 49.67	2.0383	S. 17 36 51.0	11.898
1	21 58 51.90	2.0360	17 24 54.4	11.988
2	22 0 53.99	2.0338	17 12 52.4	12.078
3	22 2 55.95	2.0315	17 0 45.1	12.167
4	22 4 57.77	2.0293	16 48 32.4	12.256
5	22 6 59.46	2.0270	16 36 14.4	12.343
6	22 9 1.01	2.0248	16 23 51.3	12.428
7	22 11 2.44	2.0228	16 11 23.0	12.514
8	22 13 3.74	2.0207	15 58 49.6	12.599
9	22 15 4.92	2.0186	15 46 11.1	12.683
10	22 17 5.97	2.0166	15 33 27.6	12.767
11	22 19 6.91	2.0147	15 20 39.1	12.849
12	22 21 7.73	2.0128	15 7 45.7	12.930
13	22 23 8.44	2.0108	14 54 47.5	13.011
14	22 25 9.03	2.0090	14 41 44.4	13.091
15	22 27 9.52	2.0073	14 28 36.6	13.169
16	22 29 9.90	2.0054	14 15 24.1	13.248
17	22 31 10.17	2.0037	14 2 6.9	13.325
18	22 33 10.34	2.0021	13 48 45.1	13.401
19	22 35 10.42	2.0005	13 35 18.8	13.476
20	22 37 10.40	1.9989	13 21 48.0	13.551
21	22 39 10.29	1.9974	13 8 12.7	13.624
22	22 41 10.09	1.9959	12 54 33.1	13.697
23	22 43 9.80	1.9945	12 40 49.1	13.768
24	22 45 9.43	1.9932	S. 12 27 0.9	13.839

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 5.			
	h m s	s	° ′ ″	″
0	22 45 9.43	1.9932	S. 12 27 0.9	13.839
1	22 47 8.98	1.9919	12 13 8.5	13.908
2	22 49 8.46	1.9907	11 59 11.9	13.978
3	22 51 7.86	1.9894	11 45 11.2	14.046
4	22 53 7.19	1.9883	11 31 6.4	14.113
5	22 55 6.45	1.9872	11 16 57.7	14.178
6	22 57 5.65	1.9862	11 2 45.0	14.243
7	22 59 4.79	1.9853	10 48 28.5	14.308
8	23 1 3.88	1.9843	10 34 8.1	14.371
9	23 3 2.91	1.9834	10 19 44.0	14.433
10	23 5 1.89	1.9826	10 5 16.2	14.494
11	23 7 0.82	1.9818	9 50 44.7	14.554
12	23 8 59.71	1.9812	9 36 9.7	14.613
13	23 10 58.56	1.9805	9 21 31.2	14.671
14	23 12 57.37	1.9800	9 6 49.2	14.728
15	23 14 56.16	1.9796	8 52 3.8	14.784
16	23 16 54.92	1.9791	8 37 15.1	14.838
17	23 18 53.65	1.9787	8 22 23.2	14.893
18	23 20 52.36	1.9784	8 7 28.0	14.947
19	23 22 51.06	1.9782	7 52 29.6	14.998
20	23 24 49.74	1.9779	7 37 28.2	15.048
21	23 26 48.41	1.9778	7 22 23.8	15.098
22	23 28 47.08	1.9778	7 7 16.4	15.148
23	23 30 45.74	1.9778	S. 6 52 6.1	15.195
	FRIDAY 6.			
0	23 32 44.41	1.9779	S. 6 36 53.0	15.242
1	23 34 43.09	1.9780	6 21 37.1	15.287
2	23 36 41.77	1.9782	6 6 18.6	15.331
3	23 38 40.47	1.9785	5 50 57.4	15.375
4	23 40 39.19	1.9788	5 35 33.6	15.417
5	23 42 37.93	1.9793	5 20 7.4	15.458
6	23 44 36.70	1.9798	5 4 38.7	15.498
7	23 46 35.50	1.9803	4 49 7.7	15.536
8	23 48 34.34	1.9809	4 33 34.4	15.573
9	23 50 33.21	1.9816	4 17 58.9	15.610
10	23 52 32.13	1.9824	4 2 21.2	15.645
11	23 54 31.10	1.9833	3 46 41.5	15.679
12	23 56 30.12	1.9842	3 30 59.7	15.712
13	23 58 29.20	1.9851	3 15 16.0	15.743
14	0 0 28.33	1.9861	2 59 30.5	15.773
15	0 2 27.53	1.9873	2 43 43.2	15.803
16	0 4 26.80	1.9885	2 27 54.1	15.832
17	0 6 26.15	1.9898	2 12 3.4	15.858
18	0 8 25.57	1.9911	1 56 11.1	15.884
19	0 10 25.08	1.9925	1 40 17.3	15.908
20	0 12 24.67	1.9940	1 24 22.1	15.931
21	0 14 24.36	1.9956	1 8 25.6	15.953
22	0 16 24.14	1.9972	0 52 27.8	15.973
23	0 18 24.02	1.9989	0 36 28.8	15.993
24	0 20 24.01	2.0008	S. 0 20 28.7	16.011

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute
	SATURDAY 7.			
	h m s	s	° ′ ″	″
0	0 20 24.01	2.0008	S. 0 20 28.7	16.011
1	0 22 24.11	2.0027	S. 0 4 27.6	16.027
2	0 24 24.33	2.0046	N. 0 11 34.5	16.042
3	0 26 24.66	2.0066	0 27 37.5	16.056
4	0 28 25.12	2.0087	0 43 41.3	16.069
5	0 30 25.70	2.0108	0 59 45.8	16.080
6	0 32 26.42	2.0132	1 15 50.9	16.090
7	0 34 27.28	2.0155	1 31 56.6	16.099
8	0 36 28.28	2.0178	1 48 2.8	16.107
9	0 38 29.42	2.0203	2 4 9.4	16.113
10	0 40 30.72	2.0229	2 20 16.3	16.117
11	0 42 32.17	2.0255	2 36 23.4	16.120
12	0 44 33.78	2.0283	2 52 30.7	16.122
13	0 46 35.56	2.0311	3 8 38.0	16.122
14	0 48 37.51	2.0339	3 24 45.3	16.121
15	0 50 39.63	2.0368	3 40 52.5	16.118
16	0 52 41.93	2.0399	3 56 59.4	16.113
17	0 54 44.42	2.0430	4 13 6.1	16.108
18	0 56 47.09	2.0462	4 29 12.4	16.101
19	0 58 49.96	2.0495	4 45 18.2	16.093
20	1 0 53.03	2.0528	5 1 23.5	16.083
21	1 2 56.30	2.0562	5 17 28.2	16.072
22	1 4 59.77	2.0597	5 33 32.2	16.059
23	1 7 3.46	2.0633	N. 5 49 35.3	16.044
	SUNDAY 8.			
0	1 9 7.36	2.0669	N. 6 5 37.5	16.028
1	1 11 11.49	2.0707	6 21 38.7	16.011
2	1 13 15.84	2.0744	6 37 38.8	15.992
3	1 15 20.42	2.0783	6 53 37.7	15.971
4	1 17 25.23	2.0822	7 9 35.3	15.948
5	1 19 30.28	2.0863	7 25 31.5	15.925
6	1 21 35.58	2.0904	7 41 26.3	15.900
7	1 23 41.13	2.0946	7 57 19.5	15.873
8	1 25 46.93	2.0988	8 13 11.0	15.844
9	1 27 52.99	2.1032	8 29 0.8	15.814
10	1 29 59.31	2.1076	8 44 48.7	15.782
11	1 32 5.90	2.1121	9 0 34.7	15.749
12	1 34 12.76	2.1166	9 16 18.6	15.714
13	1 36 19.89	2.1212	9 32 0.4	15.677
14	1 38 27.30	2.1259	9 47 39.9	15.638
15	1 40 35.00	2.1308	10 3 17.0	15.598
16	1 42 42.99	2.1356	10 18 51.7	15.558
17	1 44 51.27	2.1404	10 34 23.9	15.514
18	1 46 59.84	2.1454	10 49 53.4	15.469
19	1 49 8.72	2.1505	11 5 20.2	15.422
20	1 51 17.90	2.1556	11 20 44.1	15.373
21	1 53 27.39	2.1608	11 36 5.0	15.323
22	1 55 37.20	2.1661	11 51 22.9	15.272
23	1 57 47.32	2.1713	12 6 37.6	15.218
24	1 59 57.76	2.1768	N. 12 21 49.0	15.162

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 9.			
	h m s	s	° ′ ″	″
0	1 59 57.76	2.1768	N.12 21 49.0	15.162
1	2 2 8.53	2.1822	12 36 57.0	15.105
2	2 4 19.62	2.1877	12 52 1.6	15.047
3	2 6 31.05	2.1933	13 7 2.6	14.986
4	2 8 42.82	2.1990	13 21 59.9	14.923
5	2 10 54.93	2.2047	13 36 53.4	14.859
6	2 13 7.38	2.2104	13 51 43.0	14.793
7	2 15 20.18	2.2163	14 6 28.6	14.725
8	2 17 33.33	2.2221	14 21 10.0	14.655
9	2 19 46.83	2.2280	14 35 47.2	14.584
10	2 22 0.69	2.2340	14 50 20.1	14.511
11	2 24 14.91	2.2400	15 4 48.5	14.435
12	2 26 29.49	2.2461	15 19 12.3	14.358
13	2 28 44.44	2.2523	15 33 31.5	14.280
14	2 30 59.76	2.2584	15 47 45.9	14.199
15	2 33 15.45	2.2647	16 1 55.4	14.117
16	2 35 31.52	2.2710	16 16 0.0	14.033
17	2 37 47.97	2.2773	16 29 59.4	13.947
18	2 40 4.80	2.2837	16 43 53.6	13.859
19	2 42 22.01	2.2901	16 57 42.5	13.769
20	2 44 39.61	2.2966	17 11 25.9	13.678
21	2 46 57.60	2.3030	17 25 3.8	13.584
22	2 49 15.97	2.3094	17 38 36.0	13.488
23	2 51 34.73	2.3160	N.17 52 2.4	13.392
	TUESDAY 10.			
0	2 53 53.89	2.3226	N.18 5 23.0	13.293
1	2 56 13.44	2.3292	18 18 37.6	13.192
2	2 58 33.39	2.3358	18 31 46.0	13.088
3	3 0 53.74	2.3425	18 44 48.2	12.984
4	3 3 14.49	2.3492	18 57 44.1	12.878
5	3 5 35.64	2.3558	19 10 33.6	12.770
6	3 7 57.19	2.3625	19 23 16.5	12.659
7	3 10 19.14	2.3693	19 35 52.7	12.547
8	3 12 41.50	2.3760	19 48 22.1	12.433
9	3 15 4.26	2.3828	20 0 44.7	12.318
10	3 17 27.43	2.3895	20 13 0.3	12.200
11	3 19 51.00	2.3963	20 25 8.7	12.080
12	3 22 14.98	2.4030	20 37 9.9	11.959
13	3 24 39.36	2.4098	20 49 3.8	11.837
14	3 27 4.15	2.4165	21 0 50.3	11.712
15	3 29 29.34	2.4233	21 12 29.2	11.585
16	3 31 54.94	2.4300	21 24 0.5	11.457
17	3 34 20.94	2.4367	21 35 24.0	11.326
18	3 36 47.34	2.4434	21 46 39.6	11.193
19	3 39 14.15	2.4501	21 57 47.2	11.059
20	3 41 41.35	2.4567	22 8 46.7	10.924
21	3 44 8.95	2.4633	22 19 38.1	10.788
22	3 46 36.95	2.4699	22 30 21.2	10.648
23	3 49 5.34	2.4765	22 40 55.9	10.507
24	3 51 34.13	2.4831	N.22 51 22.0	10.364

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 11.			
	h m s	s	° ′ ″	″
0	3 51 34.13	2.4831	N.22 51 22.0	10.364
1	3 54 3.31	2.4896	23 1 39.6	10.220
2	3 56 32.88	2.4960	23 11 48.4	10.073
3	3 59 2.83	2.5023	23 21 48.4	9.926
4	4 1 33.16	2.5088	23 31 39.5	9.776
5	4 4 3.88	2.5151	23 41 21.5	9.625
6	4 6 34.97	2.5213	23 50 54.5	9.473
7	4 9 6.43	2.5274	24 0 18.3	9.318
8	4 11 38.26	2.5336	24 9 32.7	9.162
9	4 14 10.46	2.5397	24 18 37.7	9.005
10	4 16 43.02	2.5456	24 27 33.3	8.847
11	4 19 15.93	2.5515	24 36 19.3	8.686
12	4 21 49.20	2.5574	24 44 55.6	8.523
13	4 24 22.82	2.5632	24 53 22.1	8.360
14	4 26 56.78	2.5688	25 1 38.8	8.195
15	4 29 31.07	2.5743	25 9 45.5	8.028
16	4 32 5.70	2.5798	25 17 42.2	7.860
17	4 34 40.65	2.5852	25 25 28.7	7.690
18	4 37 15.92	2.5905	25 33 5.0	7.520
19	4 39 51.51	2.5957	25 40 31.1	7.348
20	4 42 27.41	2.6008	25 47 46.8	7.175
21	4 45 3.61	2.6058	25 54 52.1	7.000
22	4 47 40.11	2.6107	26 1 46.8	6.824
23	4 50 16.89	2.6154	N.26 8 31.0	6.648
	THURSDAY 12.			
0	4 52 53.96	2.6201	N.26 15 4.5	6.469
1	4 55 31.30	2.6246	26 21 27.3	6.289
2	4 58 8.91	2.6289	26 27 39.3	6.108
3	5 0 46.77	2.6332	26 33 40.4	5.927
4	5 3 24.89	2.6373	26 39 30.5	5.744
5	5 6 3.25	2.6413	26 45 9.6	5.560
6	5 8 41.85	2.6452	26 50 37.7	5.376
7	5 11 20.68	2.6489	26 55 54.7	5.190
8	5 13 59.72	2.6524	27 1 0.5	5.003
9	5 16 38.97	2.6559	27 5 55.1	4.816
10	5 19 18.43	2.6592	27 10 38.4	4.628
11	5 21 58.08	2.6623	27 15 10.4	4.438
12	5 24 37.91	2.6653	27 19 31.0	4.248
13	5 27 17.92	2.6682	27 23 40.2	4.058
14	5 29 58.09	2.6708	27 27 37.9	3.866
15	5 32 38.41	2.6733	27 31 24.1	3.674
16	5 35 18.88	2.6757	27 34 58.8	3.482
17	5 37 59.49	2.6778	27 38 21.9	3.288
18	5 40 40.22	2.6798	27 41 33.4	3.094
19	5 43 21.07	2.6818	27 44 33.2	2.899
20	5 46 2.03	2.6834	27 47 21.3	2.705
21	5 48 43.08	2.6849	27 49 57.8	2.511
22	5 51 24.22	2.6863	27 52 22.6	2.315
23	5 54 5.43	2.6874	27 54 35.6	2.118
24	5 56 46.71	2.6884	N.27 56 36.8	1.922

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 13.			
	h m s	s	° ′ ″	″
0	5 56 46.71	2.6884	N.27 56 36.8	1.922
1	5 59 28.04	2.6893	27 58 26.2	1.726
2	6 2 9.42	2.6899	28 0 3.9	1.530
3	6 4 50.83	2.6904	28 1 29.8	1.333
4	6 7 32.27	2.6907	28 2 43.9	1.136
5	6 10 13.72	2.6908	28 3 46.1	0.938
6	6 12 55.17	2.6908	28 4 36.5	0.742
7	6 15 36.61	2.6905	28 5 15.1	0.545
8	6 18 18.03	2.6901	28 5 41.9	0.348
9	6 20 59.42	2.6896	28 5 56.9	+0.152
10	6 23 40.78	2.6889	28 6 0.1	−0.045
11	6 26 22.09	2.6879	28 5 51.5	0.241
12	6 29 3.33	2.6868	28 5 31.2	0.438
13	6 31 44.50	2.6855	28 4 59.0	0.634
14	6 34 25.59	2.6841	28 4 15.1	0.829
15	6 37 6.59	2.6825	28 3 19.5	1.025
16	6 39 47.49	2.6807	28 2 12.1	1.220
17	6 42 28.27	2.6787	28 0 53.1	1.414
18	6 45 8.93	2.6766	27 59 22.4	1.603
19	6 47 49.46	2.6743	27 57 40.1	1.802
20	6 50 29.85	2.6719	27 55 46.2	1.994
21	6 53 10.09	2.6693	27 53 40.8	2.187
22	6 55 50.17	2.6665	27 51 23.8	2.379
23	6 58 30.07	2.6635	N.27 48 55.3	2.570
	SATURDAY 14.			
0	7 1 9.79	2.6604	N.27 46 15.4	2.760
1	7 3 49.32	2.6572	27 43 24.1	2.950
2	7 6 28.65	2.6538	27 40 21.4	3.139
3	7 9 7.77	2.6502	27 37 7.4	3.327
4	7 11 46.67	2.6465	27 33 42.2	3.513
5	7 14 25.35	2.6427	27 30 5.8	3.700
6	7 17 3.79	2.6387	27 26 18.2	3.886
7	7 19 41.99	2.6346	27 22 19.5	4.070
8	7 22 19.94	2.6303	27 18 9.8	4.253
9	7 24 57.62	2.6258	27 13 49.1	4.437
10	7 27 35.04	2.6213	27 9 17.4	4.618
11	7 30 12.18	2.6167	27 4 34.9	4.798
12	7 32 49.04	2.6119	26 59 41.7	4.977
13	7 35 25.61	2.6070	26 54 37.7	5.156
14	7 38 1.88	2.6019	26 49 23.0	5.333
15	7 40 37.84	2.5968	26 43 57.8	5.508
16	7 43 13.49	2.5915	26 38 22.1	5.683
17	7 45 48.82	2.5862	26 32 35.9	5.856
18	7 48 23.83	2.5807	26 26 39.4	6.028
19	7 50 58.50	2.5751	26 20 32.6	6.198
20	7 53 32.84	2.5695	26 14 15.6	6.368
21	7 56 6.84	2.5637	26 7 48.5	6.536
22	7 58 40.49	2.5578	26 1 11.3	6.703
23	8 1 13.78	2.5518	25 54 24.1	6.869
24	8 3 46.71	2.5458	N.25 47 27.0	7.033

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 15.			
	h m s	s	° ′ ″	″
0	8 3 46.71	2.5458	N.25 47 27.0	7.033
1	8 6 19.28	2.5397	25 40 20.2	7.195
2	8 8 51.48	2.5335	25 33 3.6	7.357
3	8 11 23.30	2.5273	25 25 37.4	7.516
4	8 13 54.75	2.5209	25 18 1.7	7.674
5	8 16 25.81	2.5145	25 10 16.5	7.831
6	8 18 56.49	2.5081	25 2 22.0	7.986
7	8 21 26.78	2.5015	24 54 18.2	8.140
8	8 23 56.67	2.4949	24 46 5.2	8.292
9	8 26 26.17	2.4883	24 37 43.1	8.443
10	8 28 55.27	2.4816	24 29 12.0	8.593
11	8 31 23.96	2.4748	24 20 32.0	8.740
12	8 33 52.25	2.4681	24 11 43.2	8.886
13	8 36 20.13	2.4613	24 2 45.7	9.030
14	8 38 47.60	2.4544	23 53 39.6	9.173
15	8 41 14.66	2.4475	23 44 25.0	9.314
16	8 43 41.30	2.4405	23 35 1.9	9.454
17	8 46 7.52	2.4336	23 25 30.5	9.592
18	8 48 33.33	2.4268	23 15 50.9	9.728
19	8 50 58.73	2.4198	23 6 3.1	9.863
20	8 53 23.71	2.4128	22 56 7.3	9.996
21	8 55 48.26	2.4057	22 46 3.6	10.128
22	8 58 12.39	2.3987	22 35 52.0	10.258
23	9 0 36.10	2.3916	N.22 25 32.7	10.386
	MONDAY 16.			
0	9 2 59.38	2.3845	N.22 15 5.7	10.513
1	9 5 22.24	2.3775	22 4 31.2	10.637
2	9 7 44.68	2.3705	21 53 49.3	10.760
3	9 10 6.70	2.3634	21 43 0.0	10.882
4	9 12 28.29	2.3563	21 32 3.5	11.001
5	9 14 49.46	2.3493	21 20 59.9	11.119
6	9 17 10.21	2.3423	21 9 49.2	11.236
7	9 19 30.54	2.3353	20 58 31.6	11.351
8	9 21 50.44	2.3283	20 47 7.1	11.464
9	9 24 9.93	2.3213	20 35 35.9	11.576
10	9 26 29.00	2.3143	20 23 58.0	11.686
11	9 28 47.65	2.3074	20 12 13.6	11.794
12	9 31 5.89	2.3006	20 0 22.7	11.901
13	9 33 23.72	2.2937	19 48 25.5	12.005
14	9 35 41.13	2.2868	19 36 22.1	12.108
15	9 37 58.13	2.2800	19 24 12.5	12.210
16	9 40 14.73	2.2733	19 11 56.9	12.310
17	9 42 30.92	2.2665	18 59 35.3	12.408
18	9 44 46.71	2.2598	18 47 7.9	12.505
19	9 47 2.09	2.2531	18 34 34.7	12.601
20	9 49 17.08	2.2465	18 21 55.8	12.694
21	9 51 31.67	2.2398	18 9 11.4	12.786
22	9 53 45.86	2.2333	17 56 21.5	12.876
23	9 55 59.67	2.2269	17 43 26.3	12.964
24	9 58 13.09	2.2204	N.17 30 25.8	13.051

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 17.			
	h m s	s	° ′ ″	″
0	9 58 13.09	2.2204	N. 17 30 25.8	13.051
1	10 0 26.12	2.2140	17 17 20.1	13.137
2	10 2 38.77	2.2077	17 4 9.4	13.221
3	10 4 51.04	2.2014	16 50 53.7	13.303
4	10 7 2.94	2.1952	16 37 33.1	13.383
5	10 9 14.46	2.1889	16 24 7.7	13.462
6	10 11 25.61	2.1828	16 10 37.7	13.538
7	10 13 36.40	2.1768	15 57 3.1	13.615
8	10 15 46.82	2.1707	15 43 23.9	13.690
9	10 17 56.88	2.1648	15 29 40.3	13.763
10	10 20 6.59	2.1588	15 15 52.4	13.833
11	10 22 15.94	2.1530	15 2 0.3	13.903
12	10 24 24.95	2.1473	14 48 4.0	13.972
13	10 26 33.61	2.1416	14 34 3.7	14.038
14	10 28 41.94	2.1360	14 19 59.5	14.103
15	10 30 49.93	2.1304	14 5 51.4	14.166
16	10 32 57.59	2.1249	13 51 39.6	14.228
17	10 35 4.92	2.1195	13 37 24.1	14.288
18	10 37 11.93	2.1142	13 23 5.0	14.348
19	10 39 18.62	2.1088	13 8 42.4	14.405
20	10 41 24.99	2.1036	12 54 16.4	14.461
21	10 43 31.05	2.0984	12 39 47.1	14.515
22	10 45 36.80	2.0933	12 25 14.6	14.568
23	10 47 42.25	2.0883	N. 12 10 38.9	14.621
	WEDNESDAY 18.			
0	10 49 47.40	2.0834	N. 11 56 0.1	14.671
1	10 51 52.26	2.0786	11 41 18.4	14.719
2	10 53 56.83	2.0738	11 26 33.8	14.766
3	10 56 1.11	2.0690	11 11 46.5	14.812
4	10 58 5.11	2.0643	10 56 56.4	14.857
5	11 0 8.83	2.0598	10 42 3.7	14.899
6	11 2 12.28	2.0553	10 27 8.5	14.941
7	11 4 15.47	2.0509	10 12 10.8	14.982
8	11 6 18.39	2.0465	9 57 10.7	15.021
9	11 8 21.05	2.0423	9 42 8.3	15.058
10	11 10 23.46	2.0381	9 27 3.7	15.094
11	11 12 25.62	2.0340	9 11 57.0	15.128
12	11 14 27.54	2.0300	8 56 48.3	15.162
13	11 16 29.22	2.0260	8 41 37.6	15.193
14	11 18 30.66	2.0221	8 26 25.1	15.224
15	11 20 31.87	2.0183	8 11 10.7	15.254
16	11 22 32.85	2.0145	7 55 54.6	15.282
17	11 24 33.61	2.0109	7 40 36.9	15.308
18	11 26 34.16	2.0074	7 25 17.6	15.334
19	11 28 34.50	2.0039	7 9 56.8	15.358
20	11 30 34.63	2.0004	6 54 34.6	15.381
21	11 32 34.56	1.9971	6 39 11.1	15.403
22	11 34 34.29	1.9938	6 23 46.3	15.423
23	11 36 33.82	1.9907	6 8 20.4	15.441
24	11 38 33.16	1.9876	N. 5 52 53.4	15.458

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 19.			
	h m s	s	° ′ ″	″
0	11 38 33.16	1.9876	N. 5 52 53.4	15.458
1	11 40 32.32	1.9846	5 37 25.4	15.475
2	11 42 31.31	1.9817	5 21 56.4	15.490
3	11 44 30.12	1.9788	5 6 26.6	15.503
4	11 46 28.76	1.9760	4 50 56.0	15.516
5	11 48 27.24	1.9733	4 35 24.7	15.528
6	11 50 25.55	1.9706	4 19 52.7	15.538
7	11 52 23.71	1.9681	4 4 20.2	15.546
8	11 54 21.72	1.9656	3 48 47.2	15.554
9	11 56 19.58	1.9632	3 33 13.7	15.561
10	11 58 17.30	1.9608	3 17 39.9	15.566
11	12 0 14.88	1.9586	3 2 5.8	15.569
12	12 2 12.33	1.9564	2 46 31.6	15.572
13	12 4 9.65	1.9543	2 30 57.2	15.573
14	12 6 6.85	1.9523	2 15 22.8	15.573
15	12 8 3.93	1.9504	1 59 48.4	15.573
16	12 10 0.90	1.9486	1 44 14.1	15.571
17	12 11 57.76	1.9468	1 28 39.9	15.568
18	12 13 54.51	1.9450	1 13 6.0	15.563
19	12 15 51.16	1.9434	0 57 32.4	15.557
20	12 17 47.72	1.9419	0 41 59.2	15.550
21	12 19 44.19	1.9404	0 26 26.4	15.543
22	12 21 40.57	1.9390	N. 0 10 54.1	15.534
23	12 23 36.87	1.9377	S. 0 4 37.6	15.523
	FRIDAY 20.			
0	12 25 33.09	1.9364	S. 0 20 8.7	15.511
1	12 27 29.24	1.9353	0 35 39.0	15.498
2	12 29 25.32	1.9341	0 51 8.5	15.485
3	12 31 21.33	1.9330	1 6 37.2	15.471
4	12 33 17.28	1.9321	1 22 5.0	15.454
5	12 35 13.18	1.9313	1 37 31.7	15.437
6	12 37 9.03	1.9304	1 52 57.4	15.419
7	12 39 4.83	1.9297	2 8 22.0	15.400
8	12 41 0.59	1.9290	2 23 45.4	15.380
9	12 42 56.31	1.9284	2 39 7.6	15.358
10	12 44 52.00	1.9279	2 54 28.4	15.335
11	12 46 47.66	1.9274	3 9 47.8	15.312
12	12 48 43.29	1.9270	3 25 5.8	15.287
13	12 50 38.90	1.9268	3 40 22.2	15.261
14	12 52 34.50	1.9265	3 55 37.1	15.234
15	12 54 30.08	1.9263	4 10 50.3	15.206
16	12 56 25.65	1.9262	4 26 1.8	15.177
17	12 58 21.22	1.9261	4 41 11.5	15.147
18	13 0 16.78	1.9261	4 56 19.4	15.115
19	13 2 12.35	1.9263	5 11 25.3	15.083
20	13 4 7.93	1.9264	5 26 29.3	15.050
21	13 6 3.52	1.9266	5 41 31.3	15.015
22	13 7 59.12	1.9268	5 56 31.1	14.979
23	13 9 54.74	1.9273	6 11 28.8	14.943
24	13 11 50.39	1.9278	S. 6 26 24.3	14.906

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 21.			
	h m s	s	° ′ ″	″
0	13 11 50.39	1.9278	S. 6 26 24.3	14.906
1	13 13 46.07	1.9282	6 41 17.5	14.867
2	13 15 41.77	1.9287	6 56 8.3	14.827
3	13 17 37.51	1.9293	7 10 56.7	14.787
4	13 19 33.29	1.9300	7 25 42.7	14.745
5	13 21 29.11	1.9308	7 40 26.1	14.702
6	13 23 24.98	1.9316	7 55 6.9	14.658
7	13 25 20.90	1.9324	8 9 45.0	14.613
8	13 27 16.87	1.9333	8 24 20.4	14.568
9	13 29 12.90	1.9343	8 38 53.1	14.521
10	13 31 8.99	1.9353	8 53 22.9	14.473
11	13 33 5.14	1.9364	9 7 49.8	14.423
12	13 35 1.36	1.9376	9 22 13.7	14.373
13	13 36 57.65	1.9388	9 36 34.6	14.323
14	13 38 54.02	1.9402	9 50 52.4	14.271
15	13 40 50.47	1.9415	10 5 7.1	14.218
16	13 42 47.00	1.9428	10 19 18.5	14.163
17	13 44 43.61	1.9443	10 33 26.7	14.108
18	13 46 40.31	1.9458	10 47 31.5	14.053
19	13 48 37.11	1.9474	11 1 33.0	13.997
20	13 50 34.00	1.9490	11 15 31.1	13.938
21	13 52 30.99	1.9507	11 29 25.6	13.879
22	13 54 28.08	1.9523	11 43 16.6	13.819
23	13 56 25.27	1.9541	S. 11 57 3.9	13.758
	SUNDAY 22.			
0	13 58 22.57	1.9559	S. 12 10 47.6	13.697
1	14 0 19.98	1.9578	12 24 27.5	13.634
2	14 2 17.51	1.9598	12 38 3.7	13.571
3	14 4 15.15	1.9617	12 51 36.0	13.506
4	14 6 12.91	1.9637	13 5 4.4	13.440
5	14 8 10.79	1.9658	13 18 28.8	13.373
6	14 10 8.80	1.9679	13 31 49.2	13.306
7	14 12 6.94	1.9700	13 45 5.5	13.238
8	14 14 5.20	1.9722	13 58 17.7	13.168
9	14 16 3.60	1.9745	14 11 25.7	13.098
10	14 18 2.14	1.9768	14 24 29.4	13.026
11	14 20 0.82	1.9791	14 37 28.8	12.954
12	14 21 59.63	1.9814	14 50 23.9	12.881
13	14 23 58.59	1.9838	15 3 14.5	12.807
14	14 25 57.69	1.9863	15 16 0.7	12.733
15	14 27 56.94	1.9888	15 28 42.4	12.656
16	14 29 56.34	1.9913	15 41 19.4	12.578
17	14 31 55.89	1.9938	15 53 51.8	12.501
18	14 33 55.60	1.9965	16 6 19.5	12.423
19	14 35 55.47	1.9991	16 18 42.5	12.343
20	14 37 55.49	2.0017	16 31 0.7	12.263
21	14 39 55.67	2.0044	16 43 14.0	12.181
22	14 41 56.02	2.0072	16 55 22.4	12.098
23	14 43 56.53	2.0099	17 7 25.8	12.015
24	14 45 57.21	2.0128	S. 17 19 24.2	11.931

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 23.			
	h m s	s	° ′ ″	″
0	14 45 57.21	2.0128	S. 17 19 24.2	11.931
1	14 47 58.06	2.0155	17 31 17.5	11.846
2	14 49 59.07	2.0183	17 43 5.7	11.760
3	14 52 0.26	2.0212	17 54 48.7	11.673
4	14 54 1.62	2.0241	18 6 26.5	11.586
5	14 56 3.15	2.0270	18 17 59.0	11.498
6	14 58 4.86	2.0300	18 29 26.2	11.408
7	15 0 6.75	2.0330	18 40 48.0	11.318
8	15 2 8.82	2.0360	18 52 4.3	11.227
9	15 4 11.07	2.0390	19 3 15.2	11.135
10	15 6 13.50	2.0420	19 14 20.5	11.042
11	15 8 16.11	2.0450	19 25 20.2	10.948
12	15 10 18.90	2.0481	19 36 14.3	10.854
13	15 12 21.88	2.0512	19 47 2.7	10.759
14	15 14 25.04	2.0543	19 57 45.4	10.663
15	15 16 28.39	2.0574	20 8 22.2	10.565
16	15 18 31.93	2.0605	20 18 53.2	10.467
17	15 20 35.65	2.0636	20 29 18.3	10.368
18	15 22 39.56	2.0668	20 39 37.4	10.269
19	15 24 43.66	2.0699	20 49 50.6	10.169
20	15 26 47.95	2.0730	20 59 57.7	10.068
21	15 28 52.43	2.0762	21 9 58.8	9.967
22	15 30 57.09	2.0793	21 19 53.7	9.864
23	15 33 1.94	2.0824	S. 21 29 42.5	9.761
	TUESDAY 24.			
0	15 35 6.98	2.0857	S. 21 39 25.0	9.656
1	15 37 12.22	2.0889	21 49 1.2	9.551
2	15 39 17.65	2.0921	21 58 31.1	9.446
3	15 41 23.27	2.0952	22 7 54.7	9.340
4	15 43 29.07	2.0983	22 17 11.9	9.233
5	15 45 35.06	2.1015	22 26 22.6	9.124
6	15 47 41.25	2.1047	22 35 26.8	9.015
7	15 49 47.62	2.1078	22 44 24.4	8.906
8	15 51 54.18	2.1109	22 53 15.5	8.796
9	15 54 0.93	2.1140	23 1 59.9	8.685
10	15 56 7.86	2.1171	23 10 37.7	8.574
11	15 58 14.98	2.1202	23 19 8.8	8.462
12	16 0 22.29	2.1233	23 27 33.1	8.348
13	16 2 29.78	2.1263	23 35 50.6	8.235
14	16 4 37.45	2.1293	23 44 1.3	8.121
15	16 6 45.30	2.1324	23 52 5.1	8.006
16	16 8 53.34	2.1355	24 0 2.0	7.890
17	16 11 1.56	2.1384	24 7 51.9	7.773
18	16 13 9.95	2.1413	24 15 34.8	7.657
19	16 15 18.52	2.1443	24 23 10.7	7.539
20	16 17 27.27	2.1473	24 30 39.5	7.421
21	16 19 36.19	2.1501	24 38 1.2	7.303
22	16 21 45.28	2.1529	24 45 15.8	7.183
23	16 23 54.54	2.1558	24 52 23.2	7.063
24	16 26 3.97	2.1586	S. 24 59 23.3	6.942

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 25.			
	h m s	s	° ′ ″	″
0	16 26 3.97	2.1586	S. 24 59 23.3	6.942
1	16 28 13.57	2.1614	25 6 16.2	6.821
2	16 30 23.34	2.1641	25 13 1.8	6.699
3	16 32 33.26	2.1668	25 19 40.1	6.577
4	16 34 43.35	2.1694	25 26 11.0	6.454
5	16 36 53.59	2.1720	25 32 34.6	6.331
6	16 39 3.99	2.1747	25 38 50.7	6.207
7	16 41 14.55	2.1773	25 44 59.4	6.083
8	16 43 25.26	2.1797	25 51 0.6	5.958
9	16 45 36.11	2.1821	25 56 54.3	5.832
10	16 47 47.11	2.1846	26 2 40.4	5.706
11	16 49 58.26	2.1869	26 8 19.0	5.579
12	16 52 9.54	2.1892	26 13 49.9	5.452
13	16 54 20.96	2.1915	26 19 13.2	5.325
14	16 56 32.52	2.1938	26 24 28.9	5.198
15	16 58 44.21	2.1959	26 29 36.9	5.069
16	17 0 56.03	2.1980	26 34 37.2	4.940
17	17 3 7.97	2.2001	26 39 29.7	4.810
18	17 5 20.04	2.2021	26 44 14.4	4.681
19	17 7 32.22	2.2040	26 48 51.4	4.552
20	17 9 44.52	2.2060	26 53 20.6	4.422
21	17 11 56.94	2.2079	26 57 42.0	4.291
22	17 14 9.47	2.2097	27 1 55.5	4.159
23	17 16 22.10	2.2113	S. 27 6 1.1	4.028
	THURSDAY 26.			
0	17 18 34.83	2.2130	S. 27 9 58.9	3.897
1	17 20 47.66	2.2147	27 13 48.8	3.765
2	17 23 0.59	2.2163	27 17 30.7	3.633
3	17 25 13.61	2.2178	27 21 4.7	3.500
4	17 27 26.72	2.2192	27 24 30.7	3.367
5	17 29 39.91	2.2205	27 27 48.7	3.233
6	17 31 53.18	2.2218	27 30 58.7	3.100
7	17 34 6.53	2.2232	27 34 0.7	2.967
8	17 36 19.96	2.2243	27 36 54.7	2.833
9	17 38 33.45	2.2254	27 39 40.6	2.698
10	17 40 47.01	2.2265	27 42 18.5	2.564
11	17 43 0.63	2.2274	27 44 48.3	2.430
12	17 45 14.30	2.2283	27 47 10.1	2.296
13	17 47 28.03	2.2292	27 49 23.8	2.161
14	17 49 41.80	2.2299	27 51 29.4	2.026
15	17 51 55.62	2.2307	27 53 26.9	1.890
16	17 54 9.48	2.2313	27 55 16.2	1.754
17	17 56 23.38	2.2319	27 56 57.4	1.619
18	17 58 37.31	2.2324	27 58 30.5	1.484
19	18 0 51.27	2.2328	27 59 55.5	1.349
20	18 3 5.25	2.2332	28 1 12.4	1.213
21	18 5 19.25	2.2335	28 2 21.1	1.078
22	18 7 33.27	2.2338	28 3 21.7	0.942
23	18 9 47.30	2.2339	28 4 14.1	0.806
24	18 12 1.34	2.2340	S. 28 4 58.4	0.671

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 27.			
	h m s	s	° ′ ″	″
0	18 12 1.34	2.2340	S. 28 4 58.4	0.671
1	18 14 15.38	2.2340	28 5 34.6	0.535
2	18 16 29.42	2.2339	28 6 2.6	0.398
3	18 18 43.45	2.2338	28 6 22.4	0.262
4	18 20 57.47	2.2336	28 6 34.1	−0.127
5	18 23 11.48	2.2333	28 6 37.6	+0.009
6	18 25 25.47	2.2330	28 6 33.0	0.144
7	18 27 39.44	2.2326	28 6 20.3	0.280
8	18 29 53.38	2.2321	28 5 59.4	0.416
9	18 32 7.29	2.2316	28 5 30.4	0.551
10	18 34 21.17	2.2310	28 4 53.3	0.686
11	18 36 35.01	2.2303	28 4 8.1	0.821
12	18 38 48.81	2.2296	28 3 14.8	0.956
13	18 41 2.56	2.2287	28 2 13.4	1.092
14	18 43 16.26	2.2278	28 1 3.8	1.227
15	18 45 29.90	2.2268	27 59 46.2	1.361
16	18 47 43.48	2.2258	27 58 20.5	1.495
17	18 49 57.00	2.2248	27 56 46.8	1.629
18	18 52 10.46	2.2237	27 55 5.0	1.763
19	18 54 23.84	2.2224	27 53 15.2	1.898
20	18 56 37.15	2.2212	27 51 17.3	2.032
21	18 58 50.38	2.2198	27 49 11.4	2.164
22	19 1 3.53	2.2184	27 46 57.6	2.297
23	19 3 16.59	2.2170	S. 27 44 35.8	2.430
	SATURDAY 28.			
0	19 5 29.57	2.2155	S. 27 42 6.0	2.563
1	19 7 42.45	2.2139	27 39 28.3	2.695
2	19 9 55.24	2.2123	27 36 42.6	2.828
3	19 12 7.93	2.2106	27 33 49.0	2.959
4	19 14 20.51	2.2088	27 30 47.5	3.090
5	19 16 32.99	2.2071	27 27 38.2	3.221
6	19 18 45.36	2.2052	27 24 21.0	3.352
7	19 20 57.61	2.2033	27 20 56.0	3.483
8	19 23 9.75	2.2013	27 17 23.1	3.613
9	19 25 21.77	2.1993	27 13 42.5	3.742
10	19 27 33.67	2.1973	27 9 54.1	3.872
11	19 29 45.44	2.1951	27 5 57.9	4.001
12	19 31 57.08	2.1930	27 1 54.0	4.129
13	19 34 8.60	2.1908	26 57 42.4	4.258
14	19 36 19.98	2.1885	26 53 23.1	4.385
15	19 38 31.22	2.1862	26 48 56.2	4.513
16	19 40 42.32	2.1838	26 44 21.6	4.640
17	19 42 53.28	2.1815	26 39 39.4	4.766
18	19 45 4.10	2.1791	26 34 49.7	4.892
19	19 47 14.77	2.1766	26 29 52.4	5.018
20	19 49 25.29	2.1741	26 24 47.6	5.143
21	19 51 35.66	2.1716	26 19 35.3	5.268
22	19 53 45.88	2.1691	26 14 15.5	5.392
23	19 55 55.95	2.1665	26 8 48.3	5.515
24	19 58 5.86	2.1638	S. 26 3 13.7	5.638

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 29.			
	h m s	s	° ′ ″	″
0	19 58 5.86	2.1638	S. 26 3 13.7	5.638
1	20 0 15.61	2.1612	25 57 31.7	5.762
2	20 2 25.20	2.1585	25 51 42.3	5.884
3	20 4 34.63	2.1558	25 45 45.6	6.006
4	20 6 43.89	2.1529	25 39 41.6	6.127
5	20 8 52.98	2.1502	25 33 30.4	6.248
6	20 11 1.91	2.1474	25 27 11.9	6.368
7	20 13 10.67	2.1446	25 20 46.2	6.488
8	20 15 19.26	2.1418	25 14 13.3	6.608
9	20 17 27.68	2.1388	25 7 33.3	6.726
10	20 19 35.92	2.1359	25 0 46.2	6.844
11	20 21 43.99	2.1331	24 53 52.0	6.962
12	20 23 51.89	2.1302	24 46 50.8	7.078
13	20 25 59.61	2.1273	24 39 42.6	7.195
14	20 28 7.16	2.1243	24 32 27.4	7.311
15	20 30 14.53	2.1213	24 25 5.3	7.426
16	20 32 21.72	2.1183	24 17 36.3	7.541
17	20 34 28.73	2.1154	24 10 0.4	7.655
18	20 36 35.57	2.1125	24 2 17.7	7.769
19	20 38 42.23	2.1094	23 54 28.1	7.882
20	20 40 48.70	2.1064	23 46 31.8	7.994
21	20 42 55.00	2.1035	23 38 28.8	8.107
22	20 45 1.12	2.1004	23 30 19.0	8.218
23	20 47 7.05	2.0974	S. 23 22 2.6	8.328
	MONDAY 30.			
0	20 49 12.81	2.0945	S. 23 13 39.6	8.438
1	20 51 18.39	2.0915	23 5 10.0	8.548
2	20 53 23.79	2.0884	22 56 33.8	8.657
3	20 55 29.00	2.0854	22 47 51.2	8.764
4	20 57 34.04	2.0825	22 39 2.1	8.872
5	20 59 38.90	2.0795	22 30 6.6	8.979
6	21 1 43.58	2.0765	22 21 4.6	9.086
7	21 3 48.08	2.0736	22 11 56.3	9.192
8	21 5 52.41	2.0707	22 2 41.6	9.297
9	21 7 56.56	2.0677	21 53 20.7	9.401
10	21 10 0.53	2.0648	21 43 53.5	9.505
11	21 12 4.33	2.0618	21 34 20.1	9.608
12	21 14 7.95	2.0589	21 24 40.5	9.711
13	21 16 11.40	2.0561	21 14 54.8	9.813
14	21 18 14.68	2.0533	21 5 3.0	9.914
15	21 20 17.79	2.0504	20 55 5.1	10.014
16	21 22 20.73	2.0476	20 45 1.3	10.113
17	21 24 23.50	2.0448	20 34 51.5	10.213
18	21 26 26.11	2.0421	20 24 35.7	10.313
19	21 28 28.55	2.0393	20 14 14.0	10.410
20	21 30 30.83	2.0366	20 3 46.5	10.507
21	21 32 32.94	2.0338	19 53 13.2	10.603
22	21 34 34.89	2.0312	19 42 34.1	10.700
23	21 36 36.68	2.0286	19 31 49.2	10.795
	TUESDAY 31.			
0	21 38 38.32	2.0260	S. 19 20 58.7	10.889
1	21 40 39.80	2.0234	19 10 2.5	10.983
2	21 42 41.13	2.0208	18 59 0.7	11.077
3	21 44 42.30	2.0183	18 47 53.3	11.169
4	21 46 43.33	2.0159	18 36 40.4	11.261
5	21 48 44.21	2.0134	18 25 22.0	11.353
6	21 50 44.94	2.0110	18 13 58.1	11.443
7	21 52 45.53	2.0087	18 2 28.8	11.533
8	21 54 45.98	2.0063	17 50 54.1	11.622
9	21 56 46.29	2.0040	17 39 14.1	11.710
10	21 58 46.46	2.0018	17 27 28.9	11.798
11	22 0 46.50	1.9995	17 15 38.4	11.885
12	22 2 46.40	1.9973	17 3 42.7	11.972
13	22 4 46.18	1.9953	16 51 41.8	12.058
14	22 6 45.83	1.9932	16 39 35.8	12.142
15	22 8 45.36	1.9912	16 27 24.8	12.226
16	22 10 44.77	1.9892	16 15 8.7	12.310
17	22 12 44.06	1.9873	16 2 47.6	12.393
18	22 14 43.24	1.9853	15 50 21.6	12.474
19	22 16 42.30	1.9834	15 37 50.7	12.555
20	22 18 41.25	1.9817	15 25 15.0	12.635
21	22 20 40.10	1.9799	15 12 34.5	12.715
22	22 22 38.84	1.9782	14 59 49.2	12.795
23	22 24 37.48	1.9766	S. 14 46 59.1	12.873
	WEDNESDAY, NOVEMBER 1.			
0	22 26 36.03	1.9750	S. 14 34 4.4	12.951

PHASES OF THE MOON.

		d	h	m
○	Full Moon . . . . Oct.	7	16	11.1
☾	Last Quarter	14	11	46.0
●	New Moon	21	16	9.3
☽	First Quarter	29	18	41.5

		d	h
☾	Perigee . . . . . Oct.	11	18.6
☾	Apogee	27	10.6

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	101 16 18	3415	102 38 17	3409	104 0 23	3402	105 22 37	3395
	Jupiter	W.	63 46 31	3115	65 14 23	3109	66 42 21	3103	68 10 27	3096
	Antares	W.	39 50 7	3043	41 19 27	3037	42 48 54	3030	44 18 29	3024
	Fomalhaut	E.	45 38 29	3429	44 16 44	3445	42 55 17	3463	41 34 11	3483
	α Pegasi	E.	67 18 21	3460	65 57 12	3464	64 36 7	3469	63 15 8	3474
	α Arietis	E.	108 30 12	3105	107 2 9	3098	105 33 58	3091	104 5 38	3083
	Saturn	E.	120 34 37	3038	119 5 11	3031	117 35 36	3024	116 5 53	3017
2	Sun	W.	112 16 0	3352	113 39 11	3342	115 2 34	3332	116 26 9	3321
	Jupiter	W.	75 33 14	3056	77 2 18	3046	78 31 34	3036	80 1 2	3026
	Antares	W.	51 48 41	2983	53 19 15	2974	54 50 0	2964	56 20 58	2954
	α Pegasi	E.	56 31 55	3511	55 11 43	3522	53 51 43	3534	52 31 56	3547
	α Arietis	E.	96 41 30	3041	95 12 8	3032	93 42 35	3022	92 12 49	3012
	Saturn	E.	108 34 59	2976	107 4 16	2967	105 33 22	2957	104 2 15	2946
3	Sun	W.	123 27 21	3261	124 52 18	3248	126 17 30	3235	127 42 58	3222
	Jupiter	W.	87 31 36	2970	89 2 26	2959	90 33 30	2946	92 4 50	2933
	Antares	W.	63 59 4	2899	65 31 24	2887	67 3 59	2875	68 36 50	2862
	α Arietis	E.	84 40 46	2958	83 9 40	2946	81 38 19	2934	80 6 44	2922
	Saturn	E.	96 23 18	2891	94 50 48	2879	93 18 2	2866	91 45 0	2854
	Aldebaran	E.	115 0 54	2958	113 29 48	2944	111 58 25	2931	110 26 45	2917
4	Jupiter	W.	99 45 41	2866	101 18 43	2852	102 52 2	2838	104 25 40	2824
	Antares	W.	76 25 16	2796	77 59 49	2782	79 34 40	2768	81 9 50	2754
	α Arietis	E.	72 24 54	2861	70 51 45	2848	69 18 19	2835	67 44 37	2823
	Saturn	E.	83 55 43	2788	82 21 0	2774	80 45 58	2760	79 10 38	2746
	Aldebaran	E.	102 44 0	2847	101 10 33	2832	99 36 47	2818	98 2 42	2803
5	Antares	W.	89 10 20	2682	90 47 24	2668	92 24 47	2653	94 2 30	2639
	α Aquilæ	W.	49 8 30	4433	50 13 22	4335	51 19 42	4245	52 27 26	4160
	α Arietis	E.	59 52 5	2762	58 16 47	2750	56 41 13	2739	55 5 25	2728
	Saturn	E.	71 9 20	2676	69 32 8	2662	67 54 36	2648	66 16 46	2633
	Aldebaran	E.	90 7 34	2731	88 31 35	2716	86 55 17	2702	85 18 40	2688
6	Antares	W.	102 15 57	2567	103 55 37	2553	105 35 36	2539	107 15 55	2526
	α Aquilæ	W.	58 24 45	3816	59 39 31	3760	60 55 15	3707	62 11 55	3657
	α Arietis	E.	47 2 56	2681	45 25 50	2674	43 48 34	2667	42 11 10	2662
	Saturn	E.	58 2 46	2564	56 23 1	2551	54 42 58	2538	53 2 37	2525
	Aldebaran	E.	77 10 50	2619	75 32 21	2606	73 53 33	2593	72 14 28	2580
	Pollux	E.	121 1 57	2568	119 22 18	2554	117 42 20	2540	116 2 2	2526
7	α Aquilæ	W.	68 47 36	3452	70 8 54	3418	71 30 50	3386	72 53 22	3357
	Fomalhaut	W.	36 19 1	3014	37 48 57	2960	39 20 0	2912	40 52 4	2868
	Saturn	E.	44 36 29	2465	42 54 26	2454	41 12 7	2443	39 29 34	2433
	Aldebaran	E.	63 54 48	2522	62 14 5	2512	60 33 7	2502	58 51 56	2492
	Pollux	E.	107 35 51	2460	105 53 42	2448	104 11 15	2436	102 28 31	2424
8	α Aquilæ	W.	79 53 44	3239	81 19 7	3221	82 44 50	3205	84 10 53	3190
	Fomalhaut	W.	48 45 3	2698	50 21 45	2672	51 59 2	2648	53 36 52	2626
	Aldebaran	E.	50 22 56	2455	48 40 39	2449	46 58 14	2445	45 15 44	2442
	Pollux	E.	93 50 44	2369	92 6 24	2359	90 21 50	2350	88 37 3	2341

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	106 44 59	3387	108 7 30	3379	109 30 10	3371	110 53 0	3362
	Jupiter	W.	69 38 42	3089	71 7 5	3081	72 35 38	3073	74 4 21	3065
	Antares	W.	45 48 12	3017	47 18 4	3009	48 48 6	3001	50 18 18	2992
	Fomalhaut	E.	40 13 28	3505	38 53 10	3589	37 33 18	3557	36 13 57	3593
	α Pegasi	E.	61 54 15	3480	60 33 28	3487	59 12 49	3494	57 52 18	3508
	α Arietis	E.	102 37 8	3076	101 8 29	3068	99 39 40	3059	98 10 40	3050
	Saturn	E.	114 36 2	3009	113 6 1	3001	111 35 51	2993	110 5 30	2985
2	Sun	W.	117 49 57	3310	119 13 57	3298	120 38 11	3286	122 2 39	3274
	Jupiter	W.	81 30 42	3016	83 0 35	3005	84 30 41	2994	86 1 1	2982
	Antares	W.	57 52 8	2944	59 23 31	2933	60 55 8	2922	62 26 59	2911
	α Pegasi	E.	51 12 23	3562	49 53 7	3581	48 34 13	3602	47 15 41	3624
	d Arietis	E.	90 42 51	3001	89 12 40	2991	87 42 16	2980	86 11 38	2969
	Saturn	E.	102 30 55	2936	100 59 22	2925	99 27 35	2914	97 55 34	2902
3	Sun	W.	129 8 41	3208	130 34 41	3194	132 0 57	3179	133 27 31	3165
	Jupiter	W.	93 36 27	2920	95 8 20	2907	96 40 30	2894	98 12 57	2880
	Antares	W.	70 9 58	2849	71 43 22	2836	73 17 3	2823	74 51 1	2810
	α Arietis	E.	78 34 53	2910	77 2 47	2898	75 30 25	2885	73 57 47	2873
	Saturn	E.	90 11 42	2841	88 38 8	2828	87 4 17	2815	85 30 8	2802
	Aldebaran	E.	108 54 47	2903	107 22 32	2889	105 49 59	2875	104 17 9	2861
4	Jupiter	W.	105 59 36	2810	107 33 51	2796	109 8 24	2781	110 43 16	2766
	Antares	W.	82 45 18	2740	84 21 5	2725	85 57 11	2711	87 33 36	2697
	α Arietis	E.	66 10 39	2811	64 36 25	2798	63 1 54	2786	61 27 7	2774
	Saturn	E.	77 35 0	2732	75 59 3	2718	74 22 48	2704	72 46 14	2690
	Aldebaran	E.	96 28 18	2789	94 53 35	2775	93 18 34	2760	91 43 14	2745
5	Antares	W.	95 40 32	2624	97 18 54	2610	98 57 35	2596	100 36 36	2581
	α Aquilæ	W.	53 36 31	4082	54 46 50	4005	55 58 21	3939	57 11 1	3876
	α Arietis	E.	53 29 22	2717	51 53 5	2707	50 16 34	2698	48 39 51	2689
	Saturn	E.	64 38 36	2619	63 0 7	2605	61 21 19	2591	59 42 12	2577
	Aldebaran	E.	83 41 44	2674	82 4 28	2660	80 26 54	2646	78 49 1	2632
6	Antares	W.	108 56 32	2512	110 37 28	2499	112 18 43	2485	114 0 17	2472
	α Aquilæ	W.	63 29 28	3610	64 47 50	3566	66 7 1	3525	67 26 57	3487
	α Arietis	E.	40 33 39	2658	38 56 3	2657	37 18 25	2656	35 40 45	2655
	Saturn	E.	51 21 58	2512	49 41 1	2499	47 59 47	2487	46 18 16	2476
	Aldebaran	E.	70 35 5	2568	68 55 25	2556	67 15 29	2544	65 35 16	2533
	Pollux	E.	114 21 25	2512	112 40 29	2499	110 59 15	2486	109 17 42	2473
7	α Aquilæ	W.	74 16 27	3330	75 40 4	3305	77 4 10	3281	78 28 44	3259
	Fomalhaut	W.	42 25 4	2828	43 58 55	2791	45 33 35	2757	47 8 59	2727
	Saturn	E.	37 46 47	2424	36 3 47	2416	34 20 35	2408	32 37 12	2401
	Aldebaran	E.	57 10 31	2483	55 28 53	2475	53 47 4	2468	52 5 5	2461
	Pollux	E.	100 45 30	2412	99 2 13	2401	97 18 39	2390	95 34 49	2379
8	α Aquilæ	W.	85 37 14	3178	87 3 50	3168	88 30 38	3158	89 57 38	3149
	Fomalhaut	W.	55 15 12	2605	56 54 0	2585	58 33 15	2567	60 12 55	2551
	Aldebaran	E.	43 33 9	2440	41 50 31	2440	40 7 53	2441	38 25 16	2441
	Pollux	E.	86 52 3	2332	85 6 50	2323	83 21 24	2315	81 35 46	2307

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	IIIh	P. L. of Diff.	VIh	P. L. of Diff.	IXh	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
9	α Aquilæ	W.	91 24 48	3143	92 52 5	3140	94 19 26	3138	95 46 51	3137
	Fomalhaut	W.	61 52 57	2536	63 33 20	2522	65 14 3	2509	66 55 4	2497
	α Pegasi	W.	43 38 39	3082	45 7 10	3029	46 36 47	2980	48 7 25	2936
	Pollux	E.	79 49 56	2300	78 3 56	2293	76 17 46	2287	74 31 27	2281
	Regulus	E.	116 22 33	2312	114 36 51	2306	112 51 0	2299	111 4 59	2292
10	α Aquilæ	W.	103 3 21	3162	104 30 16	3173	105 56 58	3187	107 23 23	3203
	Fomalhaut	W.	75 23 52	2451	77 6 14	2445	78 48 44	2440	80 31 22	2435
	α Pegasi	W.	55 52 50	2773	57 27 53	2749	59 3 28	2728	60 39 31	2708
	Pollux	E.	65 37 50	2256	63 50 46	2253	62 3 37	2250	60 16 24	2247
	Regulus	E.	102 12 44	2267	100 25 56	2263	98 39 2	2260	96 52 3	2257
11	Fomalhaut	W.	89 5 58	2421	90 49 3	2421	92 32 8	2421	94 15 13	2422
	α Pegasi	W.	68 45 28	2638	70 23 32	2628	72 1 49	2620	73 40 17	2613
	Pollux	E.	51 19 24	2238	49 31 53	2238	47 44 22	2237	45 56 50	2238
	Regulus	E.	87 56 14	2247	86 8 57	2247	84 21 40	2247	82 34 22	2247
12	Fomalhaut	W.	102 50 2	2436	104 32 46	2441	106 15 23	2447	107 57 52	2453
	α Pegasi	W.	81 54 32	2594	83 33 35	2593	85 12 40	2594	86 51 45	2595
	α Arietis	W.	38 44 46	2387	40 28 40	2378	42 12 46	2371	43 57 2	2365
	SATURN	W.	26 47 15	2273	28 33 54	2269	30 20 39	2266	32 7 28	2265
	Pollux	E.	36 59 25	2243	35 12 2	2245	33 24 42	2247	31 37 25	2250
	Regulus	E.	73 38 3	2252	71 50 53	2254	70 3 45	2256	68 16 41	2259
	SUN	E.	122 59 42	2550	121 19 38	2552	119 39 37	2554	117 59 39	2556
13	α Pegasi	W.	95 6 23	2612	96 45 2	2618	98 23 32	2625	100 1 53	2633
	α Arietis	W.	52 39 58	2352	54 24 43	2351	56 9 28	2350	57 54 14	2351
	SATURN	W.	41 1 52	2266	42 48 42	2267	44 35 30	2269	46 22 15	2272
	Regulus	E.	59 22 28	2276	57 35 53	2279	55 49 23	2283	54 2 59	2288
	SUN	E.	109 40 43	2572	108 1 9	2576	106 21 41	2579	104 42 17	2583
14	α Arietis	W.	66 37 37	2361	68 22 8	2364	70 6 35	2367	71 50 57	2371
	SATURN	W.	55 14 56	2288	57 1 13	2292	58 47 24	2296	60 33 30	2300
	Aldebaran	W.	36 29 10	2430	38 12 2	2424	39 55 2	2420	41 38 8	2417
	Regulus	E.	45 12 52	2316	43 27 15	2322	41 41 48	2329	39 56 30	2336
	SUN	E.	96 26 47	2606	94 48 0	2611	93 9 20	2616	91 30 47	2622
15	α Arietis	W.	80 31 23	2392	82 15 9	2397	83 58 48	2402	85 42 20	2407
	SATURN	W.	69 22 18	2324	71 7 43	2329	72 53 0	2334	74 38 9	2339
	Aldebaran	W.	50 14 18	2415	51 57 32	2416	53 40 43	2418	55 23 52	2421
	SUN	E.	83 19 53	2649	81 42 5	2655	80 4 24	2661	78 26 52	2667
16	α Arietis	W.	94 18 2	2436	96 0 45	2443	97 43 19	2450	99 25 43	2456
	SATURN	W.	83 22 0	2367	85 6 22	2373	86 50 35	2379	88 34 40	2385
	Aldebaran	W.	63 58 32	2438	65 41 12	2443	67 23 46	2447	69 6 14	2452
	Pollux	W.	19 41 11	2388	21 25 3	2393	23 8 48	2398	24 52 25	2403
	SUN	E.	70 21 13	2698	68 44 30	2705	67 7 57	2711	65 31 32	2717
17	SATURN	W.	97 12 52	2417	98 56 3	2424	100 39 4	2430	102 21 56	2436
	Aldebaran	W.	77 36 45	2479	79 18 28	2485	81 0 2	2491	82 41 28	2497
	Pollux	W.	33 28 40	2431	35 11 30	2437	36 54 12	2443	38 36 45	2450
	SUN	E.	57 31 38	2752	55 56 7	2759	54 20 45	2766	52 45 33	2773

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
9	α Aquilæ	W.	97 14 16	3138	98 41 40	3141	100 9 1	3146	101 36 15	3153
	Fomalhaut	W.	68 36 21	2487	70 17 53	2477	71 59 40	2467	73 41 40	2458
	α Pegasi	W.	49 38 58	2897	51 11 21	2861	52 44 30	2828	54 18 21	2799
	Pollux	E.	72 44 59	2275	70 58 23	2270	69 11 39	2265	67 24 48	2260
	Regulus	E.	109 18 48	2287	107 32 29	2281	105 46 1	2276	103 59 26	2271
10	α Aquilæ	W.	108 49 29	3221	110 15 14	3242	111 40 34	3266	113 5 26	3292
	Fomalhaut	W.	82 14 8	2431	83 56 59	2427	85 39 55	2424	87 22 55	2422
	α Pegasi	W.	62 16 0	2691	63 52 52	2675	65 30 6	2660	67 7 39	2648
	Pollux	E.	58 29 6	2245	56 41 45	2243	54 54 20	2241	53 6 53	2239
	Regulus	E.	95 5 0	2254	93 17 53	2252	91 30 43	2250	89 43 30	2248
11	Fomalhaut	W.	95 58 17	2423	97 41 19	2425	99 24 17	2428	101 7 12	2431
	α Pegasi	W.	75 18 55	2607	76 57 41	2602	78 36 33	2598	80 15 31	2596
	Pollux	E.	44 9 19	2238	42 21 48	2239	40 34 19	2240	38 46 51	2241
	Regulus	E.	80 47 4	2247	78 59 47	2248	77 12 31	2249	75 25 16	2250
12	Fomalhaut	W.	109 40 12	2460	111 22 22	2468	113 4 20	2477	114 46 6	2486
	α Pegasi	W.	88 30 48	2597	90 9 48	2599	91 48 45	2602	93 27 37	2607
	α Arietis	W.	45 41 27	2360	47 25 59	2357	49 10 35	2355	50 55 15	2353
	SATURN	W.	33 54 19	2264	35 41 12	2263	37 28 6	2263	39 15 0	2264
	Pollux	E.	29 50 12	2253	28 3 4	2257	26 16 1	2261	24 29 4	2265
	Regulus	E.	66 29 41	2262	64 42 46	2265	62 55 55	2268	61 9 9	2272
	SUN	E.	116 19 44	2559	114 39 53	2562	113 0 5	2565	111 20 22	2568
13	α Pegasi	W.	101 40 3	2642	103 18 2	2652	104 55 47	2662	106 33 18	2673
	α Arietis	W.	59 39 0	2353	61 23 43	2355	63 8 24	2356	64 53 2	2358
	SATURN	W.	48 8 56	2275	49 55 33	2278	51 42 5	2281	53 28 33	2284
	Regulus	E.	52 16 42	2293	50 30 33	2298	48 44 31	2304	46 58 37	2310
	SUN	E.	103 2 59	2588	101 23 47	2592	99 44 41	2596	98 5 41	2601
14	α Arietis	W.	73 35 14	2375	75 19 25	2379	77 3 31	2383	78 47 30	2387
	SATURN	W.	62 19 29	2305	64 5 21	2309	65 51 7	2314	67 36 46	2319
	Aldebaran	W.	43 21 19	2415	45 4 33	2415	46 47 47	2414	48 31 3	2414
	Regulus	E.	38 11 23	2343	36 26 26	2351	34 41 41	2359	32 57 8	2368
	SUN	E.	89 52 22	2627	88 14 4	2632	86 35 53	2638	84 57 49	2643
15	α Arietis	W.	87 25 45	2418	89 9 2	2418	90 52 10	2424	92 35 10	2430
	SATURN	W.	76 23 11	2345	78 8 5	2350	79 52 51	2356	81 37 30	2362
	Aldebaran	W.	57 6 57	2424	58 49 58	2427	60 32 54	2430	62 15 46	2434
	SUN	E.	76 49 28	2673	75 12 12	2679	73 35 4	2685	71 58 4	2692
16	α Arietis	W.	101 7 58	2463	102 50 3	2470	104 31 58	2477	106 13 43	2485
	SATURN	W.	90 18 36	2391	92 2 23	2397	93 46 2	2403	95 29 32	2410
	Aldebaran	W.	70 48 35	2457	72 30 49	2462	74 12 55	2467	75 54 54	2473
	Pollux	W.	26 35 56	2408	28 19 19	2414	30 2 34	2419	31 45 41	2425
	SUN	E.	63 55 15	2724	62 19 7	2731	60 43 9	2738	59 7 19	2745
17	SATURN	W.	104 4 39	2443	105 47 12	2450	107 29 35	2458	109 11 48	2465
	Aldebaran	W.	84 22 45	2504	86 3 53	2510	87 44 52	2517	89 25 41	2524
	Pollux	W.	40 19 8	2457	42 1 22	2464	43 43 26	2470	45 25 21	2477
	SUN	E.	51 10 30	2781	49 35 37	2788	48 0 53	2795	46 26 19	2803

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
18	SATURN	W.	110 53 51	2472	112 35 43	2480	114 17 25	2487	115 58 56	2495
	Aldebaran	W.	91 6 21	2532	92 46 50	2539	94 27 9	2546	96 7 18	2554
	Pollux	W.	47 7 7	2484	48 48 42	2491	50 30 8	2498	52 11 24	2506
	SUN	E.	44 51 55	2811	43 17 42	2819	41 43 38	2827	40 9 45	2835
19	Aldebaran	W.	104 25 14	2596	106 4 14	2605	107 43 2	2615	109 21 37	2624
	Pollux	W.	60 35 4	2544	62 15 16	2553	63 55 16	2561	65 35 5	2569
	SUN	E.	32 22 58	2877	30 50 10	2886	29 17 33	2894	27 45 7	2903
23	SUN	W.	15 25 9	3207	16 51 10	3218	18 16 58	3228	19 42 34	3239
	Fomalhaut	E.	106 32 59	3046	105 3 43	3054	103 34 37	3061	102 5 40	3069
24	SUN	W.	26 47 26	3291	28 11 48	3301	29 35 59	3311	30 59 58	3320
	Fomalhaut	E.	94 43 18	3110	93 15 20	3118	91 47 32	3127	90 19 54	3136
	α Pegasi	E.	114 52 10	3350	113 28 56	3349	112 5 41	3350	110 42 27	3350
25	SUN	W.	37 57 12	3365	39 20 9	3373	40 42 56	3381	42 5 34	3388
	Fomalhaut	E.	83 4 29	3180	81 37 56	3189	80 11 33	3198	78 45 21	3207
	α Pegasi	E.	103 46 37	3361	102 23 36	3364	101 0 38	3367	99 37 45	3371
26	SUN	W.	48 56 42	3422	50 18 34	3428	51 40 19	3433	53 1 59	3438
	Antares	W.	12 13 38	3056	13 42 29	3067	15 11 19	3069	16 40 6	3071
	Fomalhaut	E.	71 37 2	3252	70 11 54	3261	68 46 56	3270	67 22 10	3279
	α Pegasi	E.	92 44 25	3393	91 22 0	3397	89 59 41	3402	88 37 26	3407
27	SUN	W.	59 49 5	3455	61 10 19	3457	62 31 31	3459	63 52 41	3460
	Antares	W.	24 3 27	3081	25 32 0	3082	27 0 32	3082	28 29 3	3083
	Fomalhaut	E.	60 20 58	3326	58 57 17	3336	57 33 47	3347	56 10 29	3358
	α Pegasi	E.	81 47 38	3432	80 25 58	3437	79 4 23	3442	77 42 54	3447
28	SUN	W.	70 38 19	3459	71 59 29	3458	73 20 40	3456	74 41 54	3454
	Antares	W.	35 51 34	3081	37 20 7	3079	38 48 42	3077	40 17 20	3074
	Fomalhaut	E.	49 17 13	3418	47 55 17	3433	46 33 38	3449	45 12 17	3466
	α Pegasi	E.	70 57 0	3476	69 36 8	3482	68 15 24	3488	66 54 46	3495
	α Arietis	E.	112 25 49	3146	110 58 35	3143	109 31 17	3140	108 3 56	3136
29	SUN	W.	81 29 0	3431	82 50 42	3425	84 12 30	3419	85 34 25	3412
	Antares	W.	47 41 31	3054	49 10 37	3048	50 39 50	3042	52 9 11	3035
	α Pegasi	E.	60 13 38	3535	58 53 53	3545	57 34 18	3556	56 14 55	3568
	α Arietis	E.	100 45 54	3112	99 17 59	3106	97 49 57	3100	96 21 48	3093
	SATURN	E.	110 54 39	3036	109 25 11	3030	107 55 35	3024	106 25 52	3017
30	SUN	W.	92 26 9	3370	93 49 0	3360	95 12 3	3349	96 35 18	3338
	Antares	W.	59 38 7	2996	61 8 25	2987	62 38 54	2977	64 9 36	2967
	α Pegasi	E.	49 41 45	3649	48 24 3	3671	47 6 45	3696	45 49 53	3724
	α Arietis	E.	88 58 46	3053	87 29 39	3044	86 0 21	3035	84 30 52	3025
	SATURN	E.	98 55 1	2977	97 24 20	2968	95 53 27	2958	94 22 22	2948
31	SUN	W.	103 34 56	3276	104 59 36	3262	106 24 33	3247	107 49 46	3233
	Antares	W.	71 46 27	2909	73 18 34	2896	74 50 58	2883	76 23 38	2870
	α Arietis	E.	77 0 11	2970	75 29 21	2958	73 58 17	2946	72 26 57	2934
	SATURN	E.	86 43 35	2891	85 11 5	2879	83 38 19	2866	82 5 16	2852

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″	″	° ′ ″	″	° ′ ″	″	° ′ ″	″
18	SATURN	W.	117 40 16	2503	119 21 25	2511	121 2 23	2520	122 43 9	2527
	Aldebaran	W.	97 47 16	2562	99 27 3	2571	101 6 38	2579	102 46 2	2588
	Pollux	W.	53 52 29	2513	55 33 24	2521	57 14 8	2529	58 54 41	2536
	SUN	E.	38 36 2	2843	37 2 30	2851	35 29 8	2860	33 55 57	2869
19	Aldebaran	W.	111 0 0	2634	112 38 9	2644	114 16 5	2654	115 53 47	2664
	Pollux	W.	67 14 43	2577	68 54 9	2585	70 33 24	2594	72 12 27	2603
	SUN	E.	26 12 52	2912	24 40 49	2922	23 8 58	2932	21 37 19	2942
23	SUN	W.	21 7 57	3249	22 33 8	3260	23 58 6	3270	25 22 52	3281
	Fomalhaut	E.	100 36 52	3077	99 8 14	3085	97 39 45	3093	96 11 27	3101
24	SUN	W.	32 23 46	3330	33 47 23	3339	35 10 49	3348	36 34 5	3356
	Fomalhaut	E.	88 52 28	3144	87 25 12	3153	85 58 7	3162	84 31 13	3171
	α Pegasi	E.	109 19 13	3351	107 56 1	3353	106 32 50	3355	105 9 42	3358
25	SUN	W.	43 28 4	3396	44 50 25	3403	46 12 38	3409	47 34 44	3416
	Fomalhaut	E.	77 19 20	3216	75 53 29	3225	74 27 49	3234	73 2 20	3243
	α Pegasi	E.	98 14 55	3375	96 52 10	3379	95 29 30	3384	94 6 55	3388
26	SUN	W.	54 23 33	3442	55 45 2	3446	57 6 27	3449	58 27 48	3452
	Antares	W.	18 8 51	3073	19 37 34	3075	21 6 14	3077	22 34 52	3079
	Fomalhaut	E.	65 57 34	3288	64 33 9	3297	63 8 54	3307	61 44 50	3317
	α Pegasi	E.	87 15 17	3412	85 53 14	3417	84 31 16	3422	83 9 24	3427
27	SUN	W.	65 13 49	3461	66 34 57	3462	67 56 3	3461	69 17 11	3460
	Antares	W.	29 57 33	3084	31 26 2	3083	32 54 32	3083	34 23 2	3082
	Fomalhaut	E.	54 47 24	3368	53 24 31	3379	52 1 51	3391	50 39 25	3404
	α Pegasi	E.	76 21 31	3453	75 0 14	3458	73 39 3	3464	72 17 58	3470
28	SUN	W.	76 3 10	3450	77 24 30	3446	78 45 55	3441	80 7 25	3436
	Antares	W.	41 46 1	3071	43 14 46	3067	44 43 36	3063	46 12 31	3059
	Fomalhaut	E.	43 51 15	3485	42 30 34	3506	41 10 16	3529	39 50 23	3554
	α Pegasi	E.	65 34 16	3501	64 13 53	3509	62 53 39	3517	61 33 34	3526
	α Arietis	E.	106 36 30	3132	105 9 0	3128	103 41 24	3123	102 13 42	3118
29	SUN	W.	86 56 28	3405	88 18 39	3397	89 40 59	3388	91 3 29	3379
	Antares	W.	53 38 40	3028	55 8 17	3021	56 38 4	3013	58 8 0	3005
	α Pegasi	E.	54 55 46	3581	53 36 51	3595	52 18 11	3611	50 59 48	3629
	α Arietis	E.	94 53 30	3086	93 25 4	3078	91 56 28	3070	90 27 42	3062
	SATURN	E.	104 56 0	3010	103 26 0	3002	101 55 51	2994	100 25 31	2986
30	SUN	W.	97 58 46	3326	99 22 27	3314	100 46 22	3302	102 10 31	3289
	Antares	W.	65 40 30	2956	67 11 38	2945	68 42 59	2934	70 14 35	2922
	α Pegasi	E.	44 33 31	3755	43 17 42	3791	42 2 30	3831	40 48 0	3877
	α Arietis	E.	83 1 10	3015	81 31 15	3004	80 1 8	2993	78 30 47	2981
	SATURN	E.	92 51 5	2938	91 19 34	2927	89 47 49	2915	88 15 49	2903
31	SUN	W.	109 15 16	3218	110 41 4	3203	112 7 10	3187	113 33 35	3171
	Antares	W.	77 56 35	2856	79 29 50	2842	81 3 24	2828	82 37 16	2812
	α Arietis	E.	70 55 21	2922	69 23 30	2909	67 51 22	2896	66 18 57	2883
	SATURN	E.	80 31 55	2838	78 58 17	2824	77 24 21	2810	75 50 6	2795

AT GREENWICH APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Semi-diameter.	Sidereal Time of Semi-diameter Passing Meridian.	Equation of Time, to be Subtracted from Apparent Time.	Diff. for 1 Hour.
		h m s	s	° ′ ″	″	′ ″	s	m s	s
Wed.	1	14 22 17.14	+ 9.765	S. 14 9 50.5	−48.59	16 9.00	66.80	16 17.68	0.091
Thur.	2	14 26 11.90	9.798	14 29 9.7	48.01	16 9.26	66.92	16 19.48	0.058
Frid.	3	14 30 7.44	9.831	14 48 14.8	47.41	16 9.51	67.03	16 20.49	0.025
Sat.	4	14 34 3.78	+ 9.864	15 7 5.5	−46.80	16 9.75	67.15	16 20.71	0.008
SUN.	5	14 38 0.92	9.898	15 25 41.3	46.17	16 10.00	67.27	16 20.12	0.042
Mon.	6	14 41 58.89	9.933	15 44 1.8	45.53	16 10.24	67.39	16 18.71	0.076
Tues.	7	14 45 57.69	+ 9.968	16 2 6.7	−44.87	16 10.48	67.50	16 16.47	0.111
Wed.	8	14 49 57.33	10.003	16 19 55.6	44.20	16 10.72	67.62	16 13.39	0.146
Thur.	9	14 53 57.82	10.039	16 37 28.2	43.51	16 10.95	67.74	16 9.47	0.182
Frid.	10	14 57 59.17	+ 10.074	16 54 44.0	−42.80	16 11.18	67.86	16 4.69	0.217
Sat.	11	15 2 1.38	10.110	17 11 42.6	42.08	16 11.40	67.98	15 59.05	0.253
SUN.	12	15 6 4.46	10.147	17 28 23.6	41.34	16 11.61	68.10	15 52.55	0.290
Mon.	13	15 10 8.42	+ 10.183	17 44 46.7	−40.58	16 11.82	68.22	15 45.17	0.326
Tues.	14	15 14 13.26	10.220	18 0 51.5	39.81	16 12.04	68.34	15 36.91	0.363
Wed.	15	15 18 18.97	10.256	18 16 37.5	39.02	16 12.25	68.45	15 27.78	0.399
Thur.	16	15 22 25.54	+ 10.292	18 32 4.4	−38.21	16 12.46	68.57	15 17.79	0.435
Frid.	17	15 26 32.97	10.328	18 47 11.7	37.39	16 12.67	68.69	15 6.94	0.470
Sat.	18	15 30 41.26	10.363	19 1 59.0	36.55	16 12.88	68.81	14 55.25	0.505
SUN.	19	15 34 50.39	+ 10.398	19 16 25.9	−35.69	16 13.08	68.92	14 42.71	0.540
Mon.	20	15 39 0.36	10.433	19 30 32.0	34.82	16 13.28	69.04	14 29.33	0.575
Tues.	21	15 43 11.16	10.467	19 44 16.9	33.93	16 13.48	69.15	14 15.13	0.609
Wed.	22	15 47 22.77	+ 10.501	19 57 40.3	−33.02	16 13.68	69.26	14 0.12	0.642
Thur.	23	15 51 35.18	10.534	20 10 41.7	32.10	16 13.87	69.37	13 44.31	0.675
Frid.	24	15 55 48.37	10.566	20 23 20.8	31.16	16 14.05	69.48	13 27.72	0.708
Sat.	25	16 0 2.33	+ 10.598	20 35 37.3	−30.21	16 14.23	69.59	13 10.36	0.739
SUN.	26	16 4 17.05	10.629	20 47 30.7	29.24	16 14.42	69.69	12 52.25	0.770
Mon.	27	16 8 32.50	10.659	20 59 0.8	28.26	16 14.60	69.79	12 33.41	0.800
Tues.	28	16 12 48.68	+ 10.689	21 10 7.1	−27.27	16 14.77	69.89	12 13.85	0.830
Wed.	29	16 17 5.56	10.718	21 20 49.4	26.26	16 14.95	69.99	11 53.58	0.859
Thur.	30	16 21 23.12	10.746	21 31 7.4	25.24	16 15.12	70.09	11 32.64	0.887
Frid.	31	16 25 41.34	+ 10.773	S. 21 41 0.8	−24.21	16 15.28	70.18	11 11.04	0.914

NOTE.—The mean time of semidiameter passing the meridian may be found by subtracting 0s.19 from the sidereal time.
The sign − prefixed to the hourly change of declination indicates that south declinations are increasing.

AT GREENWICH MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Equation of Time, to be Added to Mean Time.	Diff. for 1 Hour.	Sidereal Time, or Right Ascension of Mean Sun.
		h m s	s	° ′ ″	″	m s	s	h m s
Wed.	1	14 22 19.79	+ 9.766	S. 14 10 3.7	− 48.59	16 17.71	+ 0.091	14 38 37.50
Thur.	2	14 26 14.56	9.798	14 29 22.8	48.01	16 19.49	0.058	14 42 34.06
Frid.	3	14 30 10.12	9.831	14 48 27.8	47.41	16 20.49	+ 0.025	14 46 30.61
Sat.	4	14 34 6.47	+ 9.865	15 7 18.3	− 46.80	16 20.70	− 0.008	14 50 27.17
SUN.	5	14 38 3.62	9.899	15 25 53.9	46.17	16 20.10	0.042	14 54 23.72
Mon.	6	14 42 1.59	9.933	15 44 14.2	45.52	16 18.69	0.076	14 58 20.28
Tues.	7	14 46 0.39	+ 9.968	16 2 18.9	− 44.86	16 16.44	− 0.111	15 2 16.84
Wed.	8	14 50 0.04	10.003	16 20 7.6	44.18	16 13.35	0.146	15 6 13.39
Thur.	9	14 54 0.53	10.038	16 37 39.9	43.49	16 9.42	0.182	15 10 9.95
Frid.	10	14 58 1.87	+ 10.074	16 54 55.4	− 42.79	16 4.63	− 0.217	15 14 6.50
Sat.	11	15 2 4.07	10.110	17 11 53.8	42.07	15 58.98	0.253	15 18 3.06
SUN.	12	15 6 7.14	10.146	17 28 34.6	41.33	15 52.47	0.290	15 21 59.62
Mon.	13	15 10 11.09	+ 10.183	17 44 57.4	− 40.57	15 45.08	− 0.326	15 25 56.17
Tues.	14	15 14 15.91	10.219	18 1 1.8	39.80	15 36.82	0.363	15 29 52.73
Wed.	15	15 18 21.60	10.255	18 16 47.5	39.01	15 27.68	0.399	15 33 49.29
Thur.	16	15 22 28.16	+ 10.291	18 32 14.1	− 38.20	15 17.68	− 0.435	15 37 45.84
Frid.	17	15 26 35.58	10.327	18 47 21.1	37.38	15 6.83	0.470	15 41 42.40
Sat.	18	15 30 43.84	10.362	19 2 8.1	36.54	14 55.12	0.505	15 45 38.96
SUN.	19	15 34 52.94	+ 10.397	19 16 34.7	− 35.68	14 42.57	− 0.540	15 49 35.52
Mon.	20	15 39 2.88	10.431	19 30 40.4	34.80	14 29.19	0.575	15 53 32.07
Tues.	21	15 43 13.64	10.465	19 44 25.0	33.91	14 14.99	0.609	15 57 28.63
Wed.	22	15 47 25.21	+ 10.499	19 57 48.0	− 33.00	13 59.98	− 0.642	16 1 25.19
Thur.	23	15 51 37.59	10.532	20 10 49.1	32.08	13 44.16	0.675	16 5 21.75
Frid.	24	15 55 50.74	10.564	20 23 27.8	31.14	13 27.56	0.708	16 9 18.30
Sat.	25	16 0 4.66	+ 10.596	20 35 43.9	− 30.19	13 10.20	− 0.739	16 13 14.86
SUN.	26	16 4 19.33	10.627	20 47 37.0	29.22	12 52.09	0.770	16 17 11.42
Mon.	27	16 8 34.74	10.657	20 59 6.7	28.24	12 33.24	0.800	16 21 7.98
Tues.	28	16 12 50.86	+ 10.686	21 10 12.6	− 27.25	12 13.67	− 0.830	16 25 4.54
Wed.	29	16 17 7.68	10.715	21 20 54.5	26.24	11 53.41	0.859	16 29 1.09
Thur.	30	16 21 25.18	10.743	21 31 12.2	25.22	11 32.47	0.887	16 32 57.65
Frid.	31	16 25 43.34	+ 10.770	S. 21 41 5.3	− 24.19	11 10.87	− 0.914	16 36 54.21

NOTE.—The semidiameter for mean noon may be assumed the same as that for apparent noon.
The sign − prefixed to the hourly change of declination indicates that south declinations are increasing.

Diff. for 1 Hour, + 9s.8565. (Table III.)

AT GREENWICH MEAN NOON.

Day of the Month.	Day of the Year.	THE SUN'S TRUE LONGITUDE. λ		Diff. for 1 Hour.	THE SUN'S TRUE LONGITUDE. λ′		Diff. for 1 Hour.	THE SUN'S LATITUDE.	Diff. for 1 Hour.	Logarithm of the Radius Vector of the Earth.	Diff. for 1 Hour.	Mean Time of Sidereal Noon.
		° ′ ″		″	′ ″		″	″				h m s
1	305	217 57 22.8		150.11	56 50.8			− 0.09		9.996 6296	− 48.1	9 19 50.53
2	306	218 57 26.2		150.18	56 54.1			0.00		9.996 5147	47.6	9 15 54.62
3	307	219 57 31.3		150.25	56 59.0			+ 0.11		9.996 4012	47.0	9 11 58.71
4	308	220 57 38.0		150.32	57 5.6			+ 0.24		9.996 2892	− 46.3	9 8 2.80
5	309	221 57 46.4		150.39	57 13.8			0.39		9.996 1788	45.6	9 4 6.89
6	310	222 57 56.5		150.46	57 23.8			0.53		9.996 0701	44.9	9 0 10.98
7	311	223 58 8.4		150.53	57 35.6			+ 0.66		9.995 9632	− 44.2	8 56 15.07
8	312	224 58 22.1		150.61	57 49.2			0.78		9.995 8582	43.4	8 52 19.16
9	313	225 58 37.8		150.69	58 4.6			0.88		9.995 7550	42.6	8 48 23.25
10	314	226 58 55.4		150.77	58 22.0			+ 0.96		9.995 6536	− 41.9	8 44 27.34
11	315	227 59 14.9		150.86	58 41.4			1.00		9.995 5538	41.2	8 40 31.43
12	316	228 59 36.4		150.94	59 2.8			1.01		9.995 4556	40.6	8 36 35.52
13	317	229 59 59.9		151.02	59 26.2			+ 0.98		9.995 3589	− 40.0	8 32 39.61
14	318	230 60 25.4		151.10	59 51.5			0.92		9.995 2635	39.5	8 28 43.70
15	319	232 0 52.9		151.18	0 18.8			0.84		9.995 1693	39.0	8 24 47.79
16	320	233 1 22.2		151.26	0 47.9			+ 0.74		9.995 0763	− 38.5	8 20 51.88
17	321	234 1 53.3		151.33	1 18.9			0.62		9.994 9844	38.1	8 16 55.96
18	322	235 2 26.2		151.40	1 51.6			0.49		9.994 8935	37.7	8 13 0.05
19	323	236 3 0.7		151.47	2 25.9			+ 0.36		9.994 8036	− 37.3	8 9 4.14
20	324	237 3 36.8		151.54	3 1.8			0.23		9.994 7147	36.9	8 5 8.23
21	325	238 4 14.4		151.60	3 39.2			0.12		9.994 6269	36.4	8 1 12.32
22	326	239 4 53.4		151.65	4 18.1			+ 0.02		9.994 5401	− 35.9	7 57 16.41
23	327	240 5 33.8		151.71	4 58.3			− 0.06		9.994 4544	35.4	7 53 20.50
24	328	241 6 15.4		151.76	5 39.8			0.11		9.994 3700	34.9	7 49 24.58
25	329	242 6 58.3		151.81	6 22.5			− 0.14		9.994 2868	− 34.4	7 45 28.67
26	330	243 7 42.3		151.86	7 6.3			0.14		9.994 2050	33.8	7 41 32.76
27	331	244 8 27.4		151.90	7 51.2			0.11		9.994 1246	33.1	7 37 36.85
28	332	245 9 13.5		151.94	8 37.2			− 0.07		9.994 0459	− 32.4	7 33 40.94
29	333	246 10 0.6		151.98	9 24.1			0.00		9.993 9689	31.7	7 29 45.02
30	334	247 10 48.7		152.02	10 12.0			+ 0.10		9.993 8938	30.9	7 25 49.11
31	335	248 11 37.7		152.06	11 0.8			+ 0.23		9.993 8207	− 30.0	7 21 53.20

NOTE.—The longitudes in the column λ are referred to the true equinox of their own date, while those in the column λ′ are referred to the mean equinox of the beginning of the Besselian fictitious year.

Diff. for 1 Hour, −9s.8296. (Table II.)

GREENWICH MEAN TIME.

THE MOON'S

Day of the Month.	SEMIDIAMETER.		HORIZONTAL PARALLAX.				UPPER TRANSIT.		AGE.
	Noon.	Midnight.	Noon.	Diff. for 1 Hour.	Midnight.	Diff. for 1 Hour.	Meridian of Greenwich.	Diff. for 1 Hour.	Noon.
	′ ″	′ ″	′ ″	″	′ ″	″	h m	m	d
1	15 15.2	15 21.5	55 53.2	+ 1.84	56 16.1	+ 1.97	8 2.5	1.85	10.3
2	15 28.2	15 35.1	56 40.5	2.07	57 5.9	2.14	8 46.8	1.85	11.3
3	15 42.2	15 49.3	57 31.9	2.17	57 58.0	2.15	9 31.5	1.88	12.3
4	15 56.2	16 2.9	58 23.5	+ 2.09	58 48.0	+ 1.98	10 17.8	1.98	13.3
5	16 9.2	16 14.8	59 10.9	1.82	59 31.6	1.61	11 7.0	2.13	14.3
6	16 19.6	16 23.6	59 49.5	1.36	60 4.2	1.08	12 0.4	2.33	15.3
7	16 26.7	16 28.8	60 15.4	+ 0.78	60 23.0	+ 0.47	12 58.6	2.53	16.3
8	16 29.9	16 29.9	60 26.8	+ 0.16	60 26.9	− 0.14	14 1.4	2.68	17.3
9	16 28.9	16 27.0	60 23.4	− 0.43	60 16.6	0.69	15 6.6	2.72	18.3
10	16 24.3	16 21.0	60 6.8	− 0.92	59 54.5	− 1.11	16 11.1	2.63	19.3
11	16 17.1	16 12.8	59 40.2	1.26	59 24.2	1.38	17 11.9	2.44	20.3
12	16 8.1	16 3.2	59 7.0	1.46	58 49.1	1.51	18 7.8	2.21	21.3
13	15 58.2	15 53.1	58 30.7	− 1.54	58 12.2	− 1.54	18 58.7	2.03	22.3
14	15 48.1	15 43.1	57 53.7	1.53	57 35.5	1.50	19 45.6	1.89	23.3
15	15 38.3	15 33.6	57 17.7	1.46	57 0.5	1.41	20 29.9	1.81	24.3
16	15 29.1	15 24.7	56 43.8	− 1.37	56 27.7	− 1.32	21 12.9	1.79	25.3
17	15 20.4	15 16.4	56 12.2	1.26	55 57.4	1.21	21 55.8	1.81	26.3
18	15 12.5	15 8.8	55 43.2	1.15	55 29.7	1.10	22 39.7	1.86	27.3
19	15 5.3	15 2.0	55 16.8	− 1.05	55 4.6	− 0.99	23 25.4	1.95	28.3
20	14 58.9	14 56.0	54 53.1	0.92	54 42.4	0.85	d	. .	29.3
21	14 53.3	14 50.9	54 32.7	0.77	54 24.0	0.68	0 13.3	2.04	0.6
22	14 48.9	14 47.2	54 16.4	− 0.58	54 10.1	− 0.47	1 3.1	2.11	1.6
23	14 45.8	14 44.9	54 5.2	0.34	54 1.9	− 0.20	1 54.3	2.15	2.6
24	14 44.5	14 44.6	54 0.3	− 0.06	54 0.5	+ 0.10	2 45.7	2.13	3.6
25	14 45.2	14 46.4	54 2.8	+ 0.28	54 7.2	+ 0.46	3 36.0	2.06	4.6
26	14 48.2	14 50.7	54 13.9	0.66	54 23.0	0.86	4 24.6	1.98	5.6
27	14 53.8	14 57.6	54 34.5	1.06	54 48.5	1.27	5 11.0	1.89	6.6
28	15 2.1	15 7.2	55 4.9	+ 1.47	55 23.8	+ 1.67	5 55.5	1.82	7.6
29	15 13.0	15 19.4	55 45.0	1.86	56 8.4	2.03	6 38.8	1.79	8.6
30	15 26.3	15 33.6	56 33.7	2.18	57 0.6	2.30	7 21.9	1.81	9.6
31	15 41.3	15 49.2	57 28.8	+ 2.39	57 57.8	+ 2.43	8 6.0	1.88	10.6

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 1.			
	h m s	s	° ′ ″	″
0	22 26 36.03	1.9750	S. 14 34 4.4	12.951
1	22 28 34.48	1.9734	14 21 5.0	13.028
2	22 30 32.84	1.9720	14 8 1.1	13.103
3	22 32 31.12	1.9706	13 54 52.6	13.179
4	22 34 29.31	1.9692	13 41 39.6	13.253
5	22 36 27.42	1.9678	13 28 22.2	13.327
6	22 38 25.45	1.9666	13 15 0.4	13.400
7	22 40 23.41	1.9653	13 1 34.2	13.473
8	22 42 21.29	1.9642	12 48 3.7	13.544
9	22 44 19.11	1.9632	12 34 28.9	13.615
10	22 46 16.87	1.9622	12 20 49.9	13.684
11	22 48 14.57	1.9612	12 7 6.8	13.753
12	22 50 12.21	1.9603	11 53 19.5	13.822
13	22 52 9.80	1.9594	11 39 28.2	13.889
14	22 54 7.34	1.9586	11 25 32.8	13.956
15	22 56 4.83	1.9578	11 11 33.5	14.022
16	22 58 2.28	1.9572	10 57 30.2	14.087
17	22 59 59.70	1.9567	10 43 23.1	14.151
18	23 1 57.08	1.9561	10 29 12.1	14.214
19	23 3 54.43	1.9557	10 14 57.4	14.277
20	23 5 51.76	1.9553	10 0 38.9	14.338
21	23 7 49.06	1.9549	9 46 16.8	14.399
22	23 9 46.35	1.9547	9 31 51.0	14.459
23	23 11 43.62	1.9545	S. 9 17 21.7	14.518
	THURSDAY 2.			
0	23 13 40.89	1.9544	S. 9 2 48.8	14.577
1	23 15 38.15	1.9543	8 48 12.5	14.633
2	23 17 35.41	1.9543	8 33 32.8	14.690
3	23 19 32.67	1.9544	8 18 49.7	14.746
4	23 21 29.94	1.9546	8 4 3.3	14.801
5	23 23 27.22	1.9548	7 49 13.6	14.854
6	23 25 24.51	1.9550	7 34 20.8	14.907
7	23 27 21.82	1.9554	7 19 24.8	14.959
8	23 29 19.16	1.9559	7 4 25.7	15.010
9	23 31 16.53	1.9564	6 49 23.6	15.060
10	23 33 13.93	1.9570	6 34 18.5	15.109
11	23 35 11.37	1.9577	6 19 10.5	15.158
12	23 37 8.85	1.9584	6 3 59.6	15.204
13	23 39 6.38	1.9593	5 48 46.0	15.250
14	23 41 3.96	1.9601	5 33 29.6	15.296
15	23 43 1.59	1.9610	5 18 10.5	15.340
16	23 44 59.28	1.9621	5 2 48.8	15.383
17	23 46 57.04	1.9633	4 47 24.5	15.425
18	23 48 54.87	1.9644	4 31 57.8	15.466
19	23 50 52.77	1.9658	4 16 28.6	15.507
20	23 52 50.76	1.9672	4 0 57.0	15.546
21	23 54 48.83	1.9685	3 45 23.1	15.583
22	23 56 46.98	1.9699	3 29 47.0	15.620
23	23 58 45.22	1.9716	3 14 8.7	15.657
24	0 0 43.57	1.9733	S. 2 58 28.2	15.692
	FRIDAY 3.			
0	0 0 43.57	1.9733	S. 2 58 28.2	15.692
1	0 2 42.02	1.9751	2 42 45.7	15.725
2	0 4 40.58	1.9769	2 27 1.2	15.757
3	0 6 39.25	1.9788	2 11 14.8	15.788
4	0 8 38.03	1.9808	1 55 26.6	15.818
5	0 10 36.94	1.9828	1 39 36.6	15.848
6	0 12 35.97	1.9850	1 23 44.9	15.876
7	0 14 35.14	1.9873	1 7 51.5	15.903
8	0 16 34.44	1.9896	0 51 56.6	15.928
9	0 18 33.89	1.9920	0 36 0.1	15.953
10	0 20 33.48	1.9944	0 20 2.2	15.976
11	0 22 33.22	1.9970	S. 0 4 3.0	15.998
12	0 24 33.12	1.9998	N. 0 11 57.5	16.018
13	0 26 33.19	2.0025	0 27 59.2	16.038
14	0 28 33.42	2.0053	0 44 2.0	16.056
15	0 30 33.82	2.0082	1 0 5.9	16.073
16	0 32 34.40	2.0112	1 16 10.8	16.089
17	0 34 35.16	2.0143	1 32 16.6	16.103
18	0 36 36.11	2.0174	1 48 23.2	16.116
19	0 38 37.25	2.0207	2 4 30.5	16.128
20	0 40 38.59	2.0240	2 20 38.5	16.138
21	0 42 40.13	2.0274	2 36 47.1	16.148
22	0 44 41.88	2.0309	2 52 56.2	16.155
23	0 46 43.84	2.0345	N. 3 9 5.7	16.161
	SATURDAY 4.			
0	0 48 46.02	2.0382	N. 3 25 15.5	16.166
1	0 50 48.42	2.0419	3 41 25.6	16.169
2	0 52 51.05	2.0458	3 57 35.8	16.171
3	0 54 53.92	2.0498	4 13 46.1	16.172
4	0 56 57.02	2.0538	4 29 56.4	16.171
5	0 59 0.37	2.0579	4 46 6.6	16.168
6	1 1 3.97	2.0621	5 2 16.6	16.164
7	1 3 7.82	2.0663	5 18 26.3	16.159
8	1 5 11.93	2.0707	5 34 35.7	16.152
9	1 7 16.30	2.0751	5 50 44.6	16.143
10	1 9 20.94	2.0797	6 6 52.9	16.133
11	1 11 25.86	2.0843	6 23 0.6	16.122
12	1 13 31.06	2.0890	6 39 7.6	16.109
13	1 15 36.54	2.0938	6 55 13.7	16.094
14	1 17 42.31	2.0987	7 11 18.9	16.078
15	1 19 48.38	2.1036	7 27 23.0	16.059
16	1 21 54.74	2.1086	7 43 26.0	16.040
17	1 24 1.41	2.1138	7 59 27.8	16.019
18	1 26 8.39	2.1190	8 15 28.3	15.996
19	1 28 15.69	2.1243	8 31 27.3	15.971
20	1 30 23.30	2.1296	8 47 24.8	15.944
21	1 32 31.24	2.1351	9 3 20.6	15.916
22	1 34 39.51	2.1406	9 19 14.7	15.886
23	1 36 48.11	2.1462	9 35 6.9	15.854
24	1 38 57.05	2.1518	N. 9 50 57.2	15.822

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 5.			
	h m s	s	° ′ ″	″
0	1 38 57.05	2.1518	N. 9 50 57.2	15.822
1	1 41 6.34	2.1577	10 6 45.5	15.787
2	1 43 15.97	2.1635	10 22 31.6	15.749
3	1 45 25.96	2.1694	10 38 15.4	15.710
4	1 47 36.30	2.1754	10 53 56.8	15.669
5	1 49 47.01	2.1815	11 9 35.7	15.627
6	1 51 58.08	2.1877	11 25 12.0	15.583
7	1 54 9.53	2.1939	11 40 45.6	15.537
8	1 56 21.35	2.2002	11 56 16.4	15.488
9	1 58 33.55	2.2066	12 11 44.2	15.438
10	2 0 46.14	2.2130	12 27 8.9	15.386
11	2 2 59.11	2.2195	12 42 30.5	15.332
12	2 5 12.48	2.2262	12 57 48.8	15.277
13	2 7 26.25	2.2328	13 13 3.7	15.218
14	2 9 40.42	2.2395	13 28 15.0	15.158
15	2 11 54.99	2.2463	13 43 22.7	15.097
16	2 14 9.97	2.2531	13 58 26.6	15.033
17	2 16 25.36	2.2600	14 13 26.6	14.967
18	2 18 41.17	2.2670	14 28 22.6	14.899
19	2 20 57.40	2.2740	14 43 14.5	14.829
20	2 23 14.05	2.2811	14 58 2.1	14.758
21	2 25 31.13	2.2883	15 12 45.4	14.684
22	2 27 48.64	2.2955	15 27 24.2	14.608
23	2 30 6.59	2.3028	N.15 41 58.3	14.529
	MONDAY 6.			
0	2 32 24.97	2.3100	N.15 56 27.7	14.449
1	2 34 43.79	2.3173	16 10 52.2	14.367
2	2 37 3.05	2.3248	16 25 11.7	14.283
3	2 39 22.76	2.3322	16 39 26.1	14.197
4	2 41 42.91	2.3396	16 53 35.3	14.108
5	2 44 3.51	2.3472	17 7 39.1	14.017
6	2 46 24.57	2.3548	17 21 37.3	13.923
7	2 48 46.08	2.3623	17 35 29.9	13.828
8	2 51 8.05	2.3700	17 49 16.7	13.731
9	2 53 30.48	2.3776	18 2 57.6	13.632
10	2 55 53.36	2.3852	18 16 32.5	13.531
11	2 58 16.70	2.3929	18 30 1.3	13.428
12	3 0 40.51	2.4007	18 43 23.8	13.322
13	3 3 4.78	2.4084	18 56 39.9	13.213
14	3 5 29.52	2.4162	19 9 49.4	13.103
15	3 7 54.72	2.4239	19 22 52.3	12.992
16	3 10 20.39	2.4318	19 35 48.4	12.877
17	3 12 46.53	2.4395	19 48 37.5	12.759
18	3 15 13.13	2.4473	20 1 19.5	12.641
19	3 17 40.20	2.4550	20 13 54.4	12.520
20	3 20 7.73	2.4628	20 26 21.9	12.397
21	3 22 35.73	2.4706	20 38 42.0	12.272
22	3 25 4.20	2.4783	20 50 54.5	12.144
23	3 27 33.13	2.4861	21 2 59.3	12.014
24	3 30 2.53	2.4938	N.21 14 56.2	11.883

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 7.			
	h m s	s	° ′ ″	″
0	3 30 2.53	2.4938	N.21 14 56.2	11.883
1	3 32 32.39	2.5016	21 26 45.2	11.749
2	3 35 2.72	2.5093	21 38 26.1	11.613
3	3 37 33.51	2.5169	21 49 58.8	11.475
4	3 40 4.75	2.5245	22 1 23.1	11.335
5	3 42 36.45	2.5321	22 12 39.0	11.193
6	3 45 8.60	2.5397	22 23 46.2	11.048
7	3 47 41.21	2.5472	22 34 44.7	10.902
8	3 50 14.26	2.5546	22 45 34.4	10.753
9	3 52 47.76	2.5620	22 56 15.1	10.603
10	3 55 21.70	2.5693	23 6 46.8	10.451
11	3 57 56.07	2.5765	23 17 9.2	10.296
12	4 0 30.88	2.5838	23 27 22.3	10.140
13	4 3 6.13	2.5910	23 37 26.0	9.982
14	4 5 41.80	2.5980	23 47 20.1	9.821
15	4 8 17.89	2.6050	23 57 4.5	9.658
16	4 10 54.40	2.6119	24 6 39.1	9.494
17	4 13 31.32	2.6187	24 16 3.8	9.328
18	4 16 8.64	2.6254	24 25 18.5	9.161
19	4 18 46.37	2.6321	24 34 23.1	8.991
20	4 21 24.49	2.6386	24 43 17.4	8.819
21	4 24 3.00	2.6450	24 52 1.4	8.646
22	4 26 41.89	2.6513	25 0 34.9	8.471
23	4 29 21.16	2.6575	N 25 8 57.9	8.294
	WEDNESDAY 8.			
0	4 32 0.79	2.6636	N.25 17 10.2	8.116
1	4 34 40.79	2.6696	25 25 11.8	7.936
2	4 37 21.14	2.6754	25 33 2.5	7.754
3	4 40 1.84	2.6812	25 40 42.3	7.571
4	4 42 42.88	2.6868	25 48 11.0	7.386
5	4 45 24.25	2.6922	25 55 28.6	7.200
6	4 48 5.94	2.6974	26 2 35.0	7.012
7	4 50 47.94	2.7025	26 9 30.0	6.823
8	4 53 30.24	2.7075	26 16 13.7	6.633
9	4 56 12.84	2.7123	26 22 45.9	6.441
10	4 58 55.72	2.7170	26 29 6.6	6.248
11	5 1 38.88	2.7216	26 35 15.7	6.054
12	5 4 22.31	2.7260	26 41 13.1	5.858
13	5 7 6.00	2.7302	26 46 58.7	5.662
14	5 9 49.93	2.7341	26 52 32.5	5.463
15	5 12 34.09	2.7379	26 57 54.3	5.264
16	5 15 18.48	2.7416	27 3 4.2	5.065
17	5 18 3.08	2.7451	27 8 2.1	4.864
18	5 20 47.89	2.7484	27 12 47.9	4.663
19	5 23 32.89	2.7515	27 17 21.6	4.460
20	5 26 18.07	2.7544	27 21 43.1	4.256
21	5 29 3.42	2.7571	27 25 52.3	4.052
22	5 31 48.92	2.7596	27 29 49.3	3.847
23	5 34 34.57	2.7620	27 33 33.9	3.641
24	5 37 20.36	2.7642	N.27 37 6.2	3.435

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 9.			
	h m s	s	° ′ ″	″
0	5 37 20.36	2.7642	N.27 37 6.2	3.435
1	5 40 6.27	2.7661	27 40 26.1	3.228
2	5 42 52.29	2.7678	27 43 33.6	3.021
3	5 45 38.40	2.7693	27 46 28.6	2.813
4	5 48 24.60	2.7706	27 49 11.1	2.604
5	5 51 10.87	2.7717	27 51 41.1	2.396
6	5 53 57.20	2.7726	27 53 58.6	2.187
7	5 56 43.58	2.7733	27 56 3.5	1.978
8	5 59 29.99	2.7737	27 57 55.9	1.768
9	6 2 16.42	2.7739	27 59 35.7	1.559
10	6 5 2.86	2.7740	28 1 3.0	1.350
11	6 7 49.30	2.7739	28 2 17.7	1.140
12	6 10 35.73	2.7736	28 3 19.8	0.931
13	6 13 22.13	2.7730	28 4 9.4	0.722
14	6 16 8.49	2.7722	28 4 46.4	0.513
15	6 18 54.79	2.7711	28 5 10.9	0.303
16	6 21 41.02	2.7699	28 5 22.8	+0.094
17	6 24 27.18	2.7685	28 5 22.2	−0.114
18	6 27 13.24	2.7668	28 5 9.1	0.323
19	6 29 59.20	2.7651	28 4 43.5	0.531
20	6 32 45.05	2.7631	28 4 5.4	0.738
21	6 35 30.77	2.7608	28 3 14.9	0.945
22	6 38 16.35	2.7583	28 2 12.0	1.152
23	6 41 1.77	2.7557	N.28 0 56.7	1.358
	FRIDAY 10.			
0	6 43 47.03	2.7528	N.27 59 29.1	1.563
1	6 46 32.11	2.7498	27 57 49.2	1.767
2	6 49 17.01	2.7467	27 55 57.1	1.970
3	6 52 1.71	2.7432	27 53 52.8	2.173
4	6 54 46.19	2.7395	27 51 36.4	2.374
5	6 57 30.45	2.7358	27 49 7.9	2.576
6	7 0 14.48	2.7318	27 46 27.3	2.776
7	7 2 58.27	2.7277	27 43 34.8	2.975
8	7 5 41.80	2.7233	27 40 30.3	3.173
9	7 8 25.07	2.7188	27 37 14.0	3.370
10	7 11 8.06	2.7142	27 33 45.9	3.567
11	7 13 50.77	2.7093	27 30 6.0	3.762
12	7 16 33.18	2.7043	27 26 14.5	3.955
13	7 19 15.28	2.6991	27 22 11.4	4.147
14	7 21 57.07	2.6938	27 17 56.8	4.338
15	7 24 38.54	2.6883	27 13 30.8	4.528
16	7 27 19.67	2.6827	27 8 53.4	4.717
17	7 30 0.46	2.6769	27 4 4.7	4.905
18	7 32 40.90	2.6710	26 59 4.8	5.091
19	7 35 20.98	2.6650	26 53 53.8	5.275
20	7 38 0.70	2.6588	26 48 31.8	5.458
21	7 40 40.04	2.6525	26 42 58.8	5.640
22	7 43 19.00	2.6461	26 37 15.0	5.820
23	7 45 57.57	2.6396	26 31 20.4	5.998
24	7 48 35.75	2.6329	N.26 25 15.2	6.175

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 11.			
	h m s	s	° ′ ″	″
0	7 48 35.75	2.6329	N.26 25 15.2	6.175
1	7 51 13.52	2.6261	26 18 59.4	6.350
2	7 53 50.88	2.6193	26 12 33.2	6.523
3	7 56 27.83	2.6123	26 5 56.6	6.696
4	7 59 4.36	2.6053	25 59 9.7	6.867
5	8 1 40.46	2.5981	25 52 12.6	7.036
6	8 4 16.13	2.5908	25 45 5.4	7.203
7	8 6 51.36	2.5835	25 37 48.3	7.368
8	8 9 26.15	2.5761	25 30 21.3	7.532
9	8 12 0.49	2.5686	25 22 44.5	7.694
10	8 14 34.38	2.5610	25 14 58.0	7.854
11	8 17 7.81	2.5533	25 7 2.0	8.013
12	8 19 40.78	2.5457	24 58 56.5	8.169
13	8 22 13.29	2.5379	24 50 41.7	8.323
14	8 24 45.33	2.5301	24 42 17.7	8.476
15	8 27 16.90	2.5223	24 33 44.6	8.628
16	8 29 48.00	2.5143	24 25 2.4	8.778
17	8 32 18.62	2.5063	24 16 11.3	8.925
18	8 34 48.76	2.4983	24 7 11.4	9.071
19	8 37 18.42	2.4903	23 58 2.8	9.214
20	8 39 47.60	2.4823	23 48 45.7	9.356
21	8 42 16.30	2.4743	23 39 20.1	9.497
22	8 44 44.51	2.4662	23 29 46.1	9.635
23	8 47 12.24	2.4581	N.23 20 3.9	9.771
	SUNDAY 12.			
0	8 49 39.48	2.4499	N.23 10 13.6	9.905
1	8 52 6.23	2.4418	23 0 15.3	10.038
2	8 54 32.49	2.4336	22 50 9.0	10.169
3	8 56 58.26	2.4255	22 39 55.0	10.298
4	8 59 23.55	2.4174	22 29 33.3	10.425
5	9 1 48.35	2.4093	22 19 4.0	10.551
6	9 4 12.66	2.4010	22 8 27.2	10.674
7	9 6 36.47	2.3928	21 57 43.1	10.796
8	9 8 59.80	2.3847	21 46 51.7	10.916
9	9 11 22.64	2.3766	21 35 53.2	11.033
10	9 13 44.99	2.3685	21 24 47.7	11.149
11	9 16 6.86	2.3604	21 13 35.3	11.263
12	9 18 28.24	2.3523	21 2 16.1	11.376
13	9 20 49.14	2.3443	20 50 50.2	11.487
14	9 23 9.56	2.3363	20 39 17.7	11.595
15	9 25 29.50	2.3284	20 27 38.8	11.702
16	9 27 48.97	2.3205	20 15 53.5	11.808
17	9 30 7.96	2.3126	20 4 1.9	11.911
18	9 32 26.48	2.3048	19 52 4.2	12.012
19	9 34 44.53	2.2969	19 40 0.5	12.112
20	9 37 2.11	2.2891	19 27 50.8	12.210
21	9 39 19.22	2.2813	19 15 35.3	12.306
22	9 41 35.87	2.2737	19 3 14.1	12.400
23	9 43 52.06	2.2661	18 50 47.3	12.493
24	9 46 7.80	2.2586	N.18 38 14.9	12.584

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 13.			
	h m s	s	° ′ ″	″
0	9 46 7.80	2.2586	N. 18 38 14.9	12.584
1	9 48 23.09	2.2511	18 25 37.2	12.673
2	9 50 37.93	2.2436	18 12 54.2	12.761
3	9 52 52.32	2.2362	18 0 5.9	12.847
4	9 55 6.27	2.2288	17 47 12.6	12.931
5	9 57 19.78	2.2216	17 34 14.2	13.013
6	9 59 32.86	2.2143	17 21 11.0	13.093
7	10 1 45.50	2.2072	17 8 3.0	13.173
8	10 3 57.72	2.2001	16 54 50.2	13.251
9	10 6 9.51	2.1930	16 41 32.9	13.326
10	10 8 20.88	2.1861	16 28 11.1	13.401
11	10 10 31.84	2.1793	16 14 44.8	13.474
12	10 12 42.39	2.1724	16 1 14.2	13.545
13	10 14 52.53	2.1657	15 47 39.4	13.614
14	10 17 2.27	2.1590	15 34 0.5	13.682
15	10 19 11.61	2.1523	15 20 17.6	13.748
16	10 21 20.55	2.1458	15 6 30.8	13.813
17	10 23 29.10	2.1393	14 52 40.1	13.876
18	10 25 37.27	2.1330	14 38 45.7	13.938
19	10 27 45.06	2.1267	14 24 47.6	13.998
20	10 29 52.47	2.1204	14 10 45.9	14.057
21	10 31 59.51	2.1143	13 56 40.8	14.114
22	10 34 6.19	2.1083	13 42 32.2	14.170
23	10 36 12.51	2.1023	N. 13 28 20.4	14.224
	TUESDAY 14.			
0	10 38 18.47	2.0964	N. 13 14 5.3	14.277
1	10 40 24.08	2.0906	12 59 47.1	14.328
2	10 42 29.34	2.0848	12 45 25.9	14.378
3	10 44 34.26	2.0793	12 31 1.7	14.427
4	10 46 38.85	2.0737	12 16 34.6	14.474
5	10 48 43.10	2.0682	12 2 4.8	14.519
6	10 50 47.03	2.0628	11 47 32.3	14.563
7	10 52 50.64	2.0575	11 32 57.2	14.607
8	10 54 53.93	2.0523	11 18 19.5	14.649
9	10 56 56.91	2.0471	11 3 39.3	14.689
10	10 58 59.58	2.0420	10 48 56.8	14.728
11	11 1 1.95	2.0371	10 34 12.0	14.765
12	11 3 4.03	2.0323	10 19 25.0	14.801
13	11 5 5.82	2.0274	10 4 35.9	14.836
14	11 7 7.32	2.0227	9 49 44.7	14.870
15	11 9 8.54	2.0181	9 34 51.5	14.903
16	11 11 9.49	2.0136	9 19 56.4	14.933
17	11 13 10.17	2.0091	9 4 59.5	14.963
18	11 15 10.58	2.0047	8 50 0.9	14.991
19	11 17 10.73	2.0004	8 35 0.6	15.018
20	11 19 10.63	1.9963	8 19 58.7	15.044
21	11 21 10.29	1.9923	8 4 55.3	15.069
22	11 23 9.70	1.9882	7 49 50.4	15.093
23	11 25 8.87	1.9843	7 34 44.1	15.116
24	11 27 7.81	1.9804	N. 7 19 36.5	15.137

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 15.			
	h m s	s	° ′ ″	″
0	11 27 7.81	1.9804	N. 7 19 36.5	15.137
1	11 29 6.52	1.9767	7 4 27.7	15.157
2	11 31 5.01	1.9731	6 49 17.7	15.175
3	11 33 3.29	1.9695	6 34 6.7	15.193
4	11 35 1.35	1.9660	6 18 54.6	15.209
5	11 36 59.21	1.9626	6 3 41.6	15.224
6	11 38 56.86	1.9593	5 48 27.7	15.238
7	11 40 54.32	1.9561	5 33 13.0	15.252
8	11 42 51.59	1.9530	5 17 57.5	15.264
9	11 44 48.68	1.9499	5 2 41.3	15.275
10	11 46 45.58	1.9469	4 47 24.5	15.284
11	11 48 42.31	1.9441	4 32 7.2	15.293
12	11 50 38.87	1.9413	4 16 49.4	15.300
13	11 52 35.27	1.9386	4 1 31.2	15.306
14	11 54 31.50	1.9359	3 46 12.7	15.311
15	11 56 27.58	1.9334	3 30 53.9	15.315
16	11 58 23.51	1.9310	3 15 34.9	15.318
17	12 0 19.30	1.9286	3 0 15.8	15.319
18	12 2 14.94	1.9263	2 44 56.6	15.321
19	12 4 10.45	1.9241	2 29 37.3	15.321
20	12 6 5.83	1.9220	2 14 18.1	15.319
21	12 8 1.09	1.9200	1 58 59.0	15.317
22	12 9 56.23	1.9181	1 43 40.1	15.313
23	12 11 51.26	1.9162	N. 1 28 21.4	15.309
	THURSDAY 16.			
0	12 13 46.17	1.9143	N. 1 13 3.0	15.303
1	12 15 40.98	1.9127	0 57 45.0	15.297
2	12 17 35.69	1.9111	0 42 27.4	15.289
3	12 19 30.31	1.9096	0 27 10.3	15.281
4	12 21 24.84	1.9082	N. 0 11 53.7	15.271
5	12 23 19.29	1.9068	S. 0 3 22.2	15.260
6	12 25 13.65	1.9054	0 18 37.5	15.249
7	12 27 7.94	1.9043	0 33 52.1	15.237
8	12 29 2.16	1.9031	0 49 5.9	15.223
9	12 30 56.31	1.9020	1 4 18.8	15.208
10	12 32 50.40	1.9011	1 19 30.8	15.193
11	12 34 44.44	1.9003	1 34 41.9	15.176
12	12 36 38.43	1.8994	1 49 51.9	15.158
13	12 38 32.37	1.8987	2 5 0.8	15.139
14	12 40 26.27	1.8980	2 20 8.6	15.120
15	12 42 20.13	1.8974	2 35 15.2	15.099
16	12 44 13.96	1.8969	2 50 20.5	15.078
17	12 46 7.76	1.8965	3 5 24.5	15.055
18	12 48 1.54	1.8962	3 20 27.1	15.032
19	12 49 55.30	1.8959	3 35 28.3	15.008
20	12 51 49.05	1.8958	3 50 28.0	14.982
21	12 53 42.79	1.8956	4 5 26.1	14.955
22	12 55 36.52	1.8955	4 20 22.6	14.928
23	12 57 30.25	1.8955	4 35 17.4	14.899
24	12 59 23.98	1.8956	S. 4 50 10.5	14.870

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 17.			
	h m s	s	° ′ ″	″
0	12 59 23.98	1.8956	S. 4 50 10.5	14.870
1	13 1 17.72	1.8958	5 5 1.8	14.840
2	13 3 11.48	1.8961	5 19 51.3	14.809
3	13 5 5.25	1.8963	5 34 38.9	14.777
4	13 6 59.04	1.8967	5 49 24.5	14.743
5	13 8 52.85	1.8972	6 4 8.1	14.709
6	13 10 46.70	1.8978	6 18 49.6	14.674
7	13 12 40.58	1.8983	6 33 29.0	14.638
8	13 14 34.49	1.8989	6 48 6.2	14.602
9	13 16 28.45	1.8997	7 2 41.2	14.563
10	13 18 22.46	1.9005	7 17 13.8	14.524
11	13 20 16.51	1.9013	7 31 44.1	14.485
12	13 22 10.62	1.9023	7 46 12.0	14.444
13	13 24 4.79	1.9033	8 0 37.4	14.403
14	13 25 59.02	1.9043	8 15 0.3	14.360
15	13 27 53.31	1.9054	8 29 20.6	14.317
16	13 29 47.67	1.9066	8 43 38.3	14.273
17	13 31 42.10	1.9079	8 57 53.3	14.227
18	13 33 36.61	1.9092	9 12 5.5	14.180
19	13 35 31.21	1.9106	9 26 14.9	14.133
20	13 37 25.89	1.9121	9 40 21.4	14.085
21	13 39 20.66	1.9136	9 54 25.1	14.036
22	13 41 15.52	1.9152	10 8 25.8	13.986
23	13 43 10.48	1.9168	S. 10 22 23.4	13.934
	SATURDAY 18.			
0	13 45 5.53	1.9184	S. 10 36 17.9	13.883
1	13 47 0.69	1.9202	10 50 9.3	13.831
2	13 48 55.95	1.9219	11 3 57.5	13.777
3	13 50 51.32	1.9238	11 17 42.5	13.722
4	13 52 46.81	1.9258	11 31 24.2	13.667
5	13 54 42.41	1.9278	11 45 2.5	13.610
6	13 56 38.14	1.9298	11 58 37.4	13.553
7	13 58 33.99	1.9318	12 12 8.8	13.494
8	14 0 29.96	1.9339	12 25 36.7	13.434
9	14 2 26.06	1.9362	12 39 1.0	13.374
10	14 4 22.30	1.9384	12 52 21.6	13.313
11	14 6 18.67	1.9407	13 5 38.5	13.250
12	14 8 15.18	1.9430	13 18 51.6	13.188
13	14 10 11.83	1.9454	13 32 1.0	13.124
14	14 12 8.63	1.9478	13 45 6.5	13.058
15	14 14 5.57	1.9503	13 58 8.0	12.993
16	14 16 2.67	1.9528	14 11 5.6	12.927
17	14 17 59.91	1.9554	14 23 59.2	12.859
18	14 19 57.32	1.9581	14 36 48.7	12.790
19	14 21 54.88	1.9607	14 49 34.0	12.720
20	14 23 52.60	1.9634	15 2 15.1	12.650
21	14 25 50.49	1.9662	15 14 52.0	12.579
22	14 27 48.54	1.9689	15 27 24.6	12.507
23	14 29 46.76	1.9717	15 39 52.8	12.433
24	14 31 45.15	1.9746	S. 15 52 16.6	12.359

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 19.			
	h m s	s	° ′ ″	″
0	14 31 45.15	1.9746	S. 15 52 16.6	12.359
1	14 33 43.71	1.9775	16 4 35.9	12.284
2	14 35 42.45	1.9805	16 16 50.7	12.208
3	14 37 41.37	1.9835	16 29 0.9	12.132
4	14 39 40.47	1.9865	16 41 6.5	12.054
5	14 41 39.75	1.9895	16 53 7.4	11.975
6	14 43 39.21	1.9926	17 5 3.5	11.895
7	14 45 38.86	1.9957	17 16 54.8	11.815
8	14 47 38.69	1.9988	17 28 41.3	11.733
9	14 49 38.71	2.0020	17 40 22.8	11.651
10	14 51 38.93	2.0052	17 51 59.4	11.568
11	14 53 39.34	2.0084	18 3 31.0	11.484
12	14 55 39.94	2.0117	18 14 57.5	11.399
13	14 57 40.74	2.0149	18 26 18.9	11.313
14	14 59 41.74	2.0183	18 37 35.1	11.226
15	15 1 42.93	2.0216	18 48 46.0	11.138
16	15 3 44.32	2.0248	18 59 51.7	11.051
17	15 5 45.91	2.0282	19 10 52.1	10.961
18	15 7 47.71	2.0317	19 21 47.0	10.870
19	15 9 49.71	2.0350	19 32 36.5	10.779
20	15 11 51.91	2.0384	19 43 20.5	10.687
21	15 13 54.32	2.0419	19 53 59.0	10.594
22	15 15 56.94	2.0453	20 4 31.8	10.500
23	15 17 59.76	2.0488	S. 20 14 59.0	10.406
	MONDAY 20.			
0	15 20 2.79	2.0523	S. 20 25 20.5	10.310
1	15 22 6.03	2.0557	20 35 36.2	10.213
2	15 24 9.47	2.0592	20 45 46.1	10.117
3	15 26 13.13	2.0627	20 55 50.2	10.018
4	15 28 16.99	2.0661	21 5 48.3	9.919
5	15 30 21.06	2.0697	21 15 40.5	9.819
6	15 32 25.35	2.0732	21 25 26.6	9.718
7	15 34 29.84	2.0766	21 35 6.7	9.618
8	15 36 34.54	2.0801	21 44 40.7	9.515
9	15 38 39.45	2.0836	21 54 8.5	9.412
10	15 40 44.57	2.0870	22 3 30.1	9.308
11	15 42 49.89	2.0905	22 12 45.5	9.203
12	15 44 55.43	2.0941	22 21 54.5	9.098
13	15 47 1.18	2.0975	22 30 57.2	8.991
14	15 49 7.13	2.1009	22 39 53.4	8.883
15	15 51 13.29	2.1043	22 48 43.2	8.777
16	15 53 19.65	2.1078	22 57 26.5	8.668
17	15 55 26.22	2.1112	23 6 3.3	8.558
18	15 57 32.99	2.1146	23 14 33.5	8.448
19	15 59 39.97	2.1180	23 22 57.0	8.337
20	16 1 47.15	2.1213	23 31 13.9	8.225
21	16 3 54.53	2.1247	23 39 24.0	8.113
22	16 6 2.11	2.1280	23 47 27.4	7.999
23	16 8 9.89	2.1313	23 55 23.9	7.885
24	16 10 17.87	2.1347	S. 24 3 13.6	7.771

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 21.			
	h m s	s	° ′ ″	″
0	16 10 17.87	2.1347	S. 24 3 13.6	7.771
1	16 12 26.05	2.1378	24 10 56.4	7.655
2	16 14 34.42	2.1411	24 18 32.2	7.538
3	16 16 42.98	2.1443	24 26 1.0	7.422
4	16 18 51.73	2.1474	24 33 22.8	7.305
5	16 21 0.67	2.1505	24 40 37.6	7.187
6	16 23 9.79	2.1536	24 47 45.2	7.068
7	16 25 19.10	2.1567	24 54 45.6	6.948
8	16 27 28.59	2.1597	25 1 38.9	6.828
9	16 29 38.26	2.1627	25 8 25.0	6.708
10	16 31 48.11	2.1656	25 15 3.8	6.586
11	16 33 58.13	2.1684	25 21 35.3	6.463
12	16 36 8.32	2.1713	25 27 59.4	6.341
13	16 38 18.68	2.1742	25 34 16.2	6.218
14	16 40 29.21	2.1769	25 40 25.6	6.094
15	16 42 39.91	2.1796	25 46 27.5	5.970
16	16 44 50.77	2.1823	25 52 21.9	5.844
17	16 47 1.78	2.1848	25 58 8.8	5.719
18	16 49 12.95	2.1874	26 3 48.2	5.593
19	16 51 24.27	2.1899	26 9 20.0	5.467
20	16 53 35.74	2.1923	26 14 44.2	5.340
21	16 55 47.35	2.1948	26 20 0.8	5.213
22	16 57 59.11	2.1971	26 25 9.7	5.084
23	17 0 11.00	2.1993	S. 26 30 10.9	4.956
	WEDNESDAY 22.			
0	17 2 23.03	2.2016	S. 26 35 4.4	4.828
1	17 4 35.19	2.2038	26 39 50.2	4.698
2	17 6 47.48	2.2058	26 44 28.2	4.568
3	17 8 59.89	2.2079	26 48 58.3	4.438
4	17 11 12.43	2.2099	26 53 20.6	4.307
5	17 13 25.08	2.2118	26 57 35.1	4.176
6	17 15 37.84	2.2136	27 1 41.7	4.045
7	17 17 50.71	2.2153	27 5 40.5	3.913
8	17 20 3.68	2.2171	27 9 31.3	3.780
9	17 22 16.76	2.2188	27 13 14.1	3.648
10	17 24 29.93	2.2203	27 16 49.0	3.516
11	17 26 43.19	2.2218	27 20 16.0	3.383
12	17 28 56.54	2.2232	27 23 34.9	3.248
13	17 31 9.97	2.2246	27 26 45.8	3.115
14	17 33 23.48	2.2258	27 29 48.7	2.982
15	17 35 37.07	2.2270	27 32 43.6	2.848
16	17 37 50.73	2.2282	27 35 30.4	2.713
17	17 40 4.45	2.2292	27 38 9.1	2.578
18	17 42 18.23	2.2302	27 40 39.7	2.443
19	17 44 32.07	2.2311	27 43 2.3	2.308
20	17 46 45.96	2.2319	27 45 16.7	2.173
21	17 48 59.90	2.2327	27 47 23.1	2.038
22	17 51 13.88	2.2333	27 49 21.3	1.903
23	17 53 27.89	2.2338	27 51 11.4	1.767
24	17 55 41.94	2.2344	S. 27 52 53.3	1.631

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 23.			
	h m s	s	° ′ ″	″
0	17 55 41.94	2.2344	S. 27 52 53.3	1.631
1	17 57 56.02	2.2348	27 54 27.1	1.495
2	18 0 10.12	2.2352	27 55 52.7	1.359
3	18 2 24.24	2.2354	27 57 10.2	1.223
4	18 4 38.37	2.2357	27 58 19.5	1.087
5	18 6 52.52	2.2358	27 59 20.6	0.951
6	18 9 6.67	2.2358	28 0 13.6	0.816
7	18 11 20.81	2.2357	28 0 58.4	0.679
8	18 13 34.95	2.2357	28 1 35.1	0.543
9	18 15 49.09	2.2355	28 2 3.6	0.408
10	18 18 3.21	2.2352	28 2 24.0	0.272
11	18 20 17.30	2.2347	28 2 36.2	−0.135
12	18 22 31.37	2.2342	28 2 40.2	+0.001
13	18 24 45.41	2.2338	28 2 36.1	0.137
14	18 26 59.42	2.2333	28 2 23.8	0.273
15	18 29 13.40	2.2326	28 2 3.4	0.408
16	18 31 27.33	2.2318	28 1 34.9	0.543
17	18 33 41.21	2.2309	28 0 58.3	0.678
18	18 35 55.04	2.2300	28 0 13.5	0.813
19	18 38 8.81	2.2290	27 59 20.7	0.948
20	18 40 22.52	2.2279	27 58 19.8	1.083
21	18 42 36.16	2.2268	27 57 10.8	1.218
22	18 44 49.74	2.2257	27 55 53.7	1.352
23	18 47 3.24	2.2243	S. 27 54 28.6	1.486
	FRIDAY 24.			
0	18 49 16.66	2.2230	S. 27 52 55.4	1.620
1	18 51 30.00	2.2215	27 51 14.2	1.753
2	18 53 43.24	2.2200	27 49 25.0	1.886
3	18 55 56.40	2.2185	27 47 27.9	2.019
4	18 58 9.46	2.2168	27 45 22.8	2.152
5	19 0 22.42	2.2151	27 43 9.7	2.285
6	19 2 35.27	2.2133	27 40 48.6	2.417
7	19 4 48.01	2.2115	27 38 19.7	2.548
8	19 7 0.64	2.2096	27 35 42.9	2.679
9	19 9 13.16	2.2076	27 32 58.2	2.811
10	19 11 25.56	2.2056	27 30 5.6	2.942
11	19 13 37.84	2.2035	27 27 5.2	3.072
12	19 15 49.98	2.2013	27 23 57.0	3.202
13	19 18 1.99	2.1991	27 20 41.0	3.331
14	19 20 13.87	2.1968	27 17 17.3	3.459
15	19 22 25.61	2.1945	27 13 45.9	3.588
16	19 24 37.21	2.1921	27 10 6.7	3.717
17	19 26 48.66	2.1896	27 6 19.9	3.844
18	19 28 59.96	2.1871	27 2 25.4	3.972
19	19 31 11.11	2.1846	26 58 23.3	4.098
20	19 33 22.11	2.1820	26 54 13.6	4.225
21	19 35 32.95	2.1793	26 49 56.3	4.351
22	19 37 43.63	2.1766	26 45 31.5	4.476
23	19 39 54.14	2.1738	26 40 59.2	4.601
24	19 42 4.49	2.1711	S. 26 36 19.4	4.725

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 25.			
	h m s	s	° ′ ″	″
0	19 42 4.49	2.1711	S.26 36 19.4	4.725
1	19 44 14.67	2.1683	26 31 32.2	4.848
2	19 46 24.68	2.1653	26 26 37.6	4.972
3	19 48 34.51	2.1624	26 21 35.6	5.095
4	19 50 44.17	2.1595	26 16 26.2	5.217
5	19 52 53.65	2.1565	26 11 9.5	5.338
6	19 55 2.95	2.1534	26 5 45.6	5.459
7	19 57 12.06	2.1503	26 0 14.4	5.580
8	19 59 20.99	2.1473	25 54 36.0	5.700
9	20 1 29.73	2.1441	25 48 50.4	5.819
10	20 3 38.28	2.1409	25 42 57.7	5.938
11	20 5 46.64	2.1378	25 36 57.8	6.057
12	20 7 54.81	2.1345	25 30 50.9	6.174
13	20 10 2.78	2.1313	25 24 36.9	6.291
14	20 12 10.56	2.1280	25 18 15.9	6.408
15	20 14 18.14	2.1247	25 11 48.0	6.523
16	20 16 25.52	2.1213	25 5 13.2	6.638
17	20 18 32.70	2.1180	24 58 31.4	6.753
18	20 20 39.68	2.1147	24 51 42.8	6.867
19	20 22 46.46	2.1113	24 44 47.4	6.980
20	20 24 53.04	2.1079	24 37 45.2	7.093
21	20 26 59.41	2.1044	24 30 36.2	7.205
22	20 29 5.57	2.1011	24 23 20.6	7.316
23	20 31 11.53	2.0977	S.24 15 58.3	7.427
	SUNDAY 26.			
0	20 33 17.29	2.0942	S.24 8 29.4	7.537
1	20 35 22.84	2.0908	24 0 53.9	7.646
2	20 37 28.18	2.0873	23 53 11.9	7.755
3	20 39 33.32	2.0838	23 45 23.3	7.863
4	20 41 38.25	2.0804	23 37 28.3	7.970
5	20 43 42.97	2.0770	23 29 26.9	8.077
6	20 45 47.48	2.0735	23 21 19.1	8.183
7	20 47 51.79	2.0701	23 13 5.0	8.288
8	20 49 55.89	2.0666	23 4 44.5	8.393
9	20 51 59.78	2.0632	22 56 17.8	8.498
10	20 54 3.47	2.0598	22 47 44.8	8.601
11	20 56 6.95	2.0563	22 39 5.7	8.703
12	20 58 10.23	2.0529	22 30 20.4	8.806
13	21 0 13.30	2.0494	22 21 29.0	8.907
14	21 2 16.16	2.0461	22 12 31.6	9.007
15	21 4 18.83	2.0428	22 3 28.2	9.108
16	21 6 21.29	2.0393	21 54 18.8	9.207
17	21 8 23.54	2.0359	21 45 3.4	9.305
18	21 10 25.60	2.0327	21 35 42.1	9.403
19	21 12 27.46	2.0293	21 26 15.0	9.500
20	21 14 29.11	2.0259	21 16 42.1	9.597
21	21 16 30.57	2.0227	21 7 3.4	9.693
22	21 18 31.84	2.0195	20 57 19.0	9.788
23	21 20 32.91	2.0162	20 47 28.9	9.883
24	21 22 33.78	2.0130	S.20 37 33.1	9.977

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 27.			
	h m s	s	° ′ ″	″
0	21 22 33.78	2.0130	S.20 37 33.1	9.977
1	21 24 34.46	2.0098	20 27 31.7	10.069
2	21 26 34.95	2.0067	20 17 24.8	10.162
3	21 28 35.26	2.0035	20 7 12.3	10.254
4	21 30 35.38	2.0004	19 56 54.3	10.345
5	21 32 35.31	1.9973	19 46 30.9	10.435
6	21 34 35.06	1.9943	19 36 2.1	10.525
7	21 36 34.63	1.9913	19 25 28.0	10.613
8	21 38 34.02	1.9883	19 14 48.5	10.702
9	21 40 33.23	1.9853	19 4 3.7	10.790
10	21 42 32.26	1.9825	18 53 13.7	10.877
11	21 44 31.13	1.9797	18 42 18.5	10.963
12	21 46 29.82	1.9768	18 31 18.2	11.048
13	21 48 28.34	1.9740	18 20 12.8	11.133
14	21 50 26.70	1.9713	18 9 2.3	11.218
15	21 52 24.90	1.9686	17 57 46.7	11.301
16	21 54 22.93	1.9658	17 46 26.2	11.383
17	21 56 20.80	1.9632	17 35 0.7	11.466
18	21 58 18.52	1.9608	17 23 30.3	11.547
19	22 0 16.09	1.9582	17 11 55.1	11.628
20	22 2 13.50	1.9557	17 0 15.0	11.708
21	22 4 10.77	1.9533	16 48 30.1	11.788
22	22 6 7.90	1.9509	16 36 40.5	11.865
23	22 8 4.88	1.9485	S.16 24 46.2	11.943
	TUESDAY 28.			
0	22 10 1.72	1.9463	S.16 12 47.3	12.022
1	22 11 58.43	1.9440	16 0 43.7	12.098
2	22 13 55.00	1.9418	15 48 35.6	12.173
3	22 15 51.44	1.9397	15 36 22.9	12.249
4	22 17 47.76	1.9376	15 24 5.7	12.323
5	22 19 43.96	1.9356	15 11 44.1	12.397
6	22 21 40.03	1.9336	14 59 18.1	12.471
7	22 23 35.99	1.9318	14 46 47.6	12.543
8	22 25 31.84	1.9299	14 34 12.9	12.614
9	22 27 27.58	1.9280	14 21 33.9	12.686
10	22 29 23.20	1.9263	14 8 50.6	12.757
11	22 31 18.73	1.9247	13 56 3.1	12.827
12	22 33 14.16	1.9231	13 43 11.4	12.896
13	22 35 9.50	1.9215	13 30 15.6	12.963
14	22 37 4.74	1.9199	13 17 15.8	13.031
15	22 38 59.89	1.9185	13 4 11.9	13.098
16	22 40 54.96	1.9172	12 51 4.0	13.165
17	22 42 49.95	1.9158	12 37 52.1	13.230
18	22 44 44.86	1.9146	12 24 36.4	13.295
19	22 46 39.70	1.9133	12 11 16.7	13.360
20	22 48 34.47	1.9122	11 57 53.2	13.423
21	22 50 29.17	1.9113	11 44 25.9	13.486
22	22 52 23.81	1.9103	11 30 54.9	13.548
23	22 54 18.40	1.9093	11 17 20.2	13.609
24	22 56 12.93	1.9084	S.11 3 41.8	13.670

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 29.			
	h m s	s	° ′ ″	″
0	22 56 12.93	1.9084	S. 11 3 41.8	13.670
1	22 58 7.41	1.9077	10 49 59.8	13.729
2	23 0 1.85	1.9070	10 36 14.3	13.788
3	23 1 56.25	1.9063	10 22 25.2	13.847
4	23 3 50.61	1.9058	10 8 32.6	13.905
5	23 5 44.94	1.9053	9 54 36.6	13.962
6	23 7 39.25	1.9049	9 40 37.2	14.018
7	23 9 33.53	1.9045	9 26 34.4	14.073
8	23 11 27.79	1.9042	9 12 28.4	14.128
9	23 13 22.03	1.9040	8 58 19.0	14.183
10	23 15 16.27	1.9038	8 44 6.4	14.236
11	23 17 10.49	1.9038	8 29 50.7	14.288
12	23 19 4.72	1.9038	8 15 31.8	14.341
13	23 20 58.95	1.9039	8 1 9.8	14.392
14	23 22 53.19	1.9041	7 46 44.8	14.442
15	23 24 47.44	1.9043	7 32 16.8	14.491
16	23 26 41.71	1.9047	7 17 45.9	14.540
17	23 28 36.00	1.9050	7 3 12.0	14.588
18	23 30 30.31	1.9055	6 48 35.3	14.635
19	23 32 24.66	1.9061	6 33 55.8	14.682
20	23 34 19.04	1.9068	6 19 13.5	14.728
21	23 36 13.47	1.9075	6 4 28.5	14.772
22	23 38 7.94	1.9083	5 49 40.9	14.816
23	23 40 2.46	1.9091	S. 5 34 50.6	14.859
	THURSDAY 30.			
0	23 41 57.03	1.9101	S. 5 19 57.8	14.901
1	23 43 51.67	1.9112	5 5 2.5	14.943
2	23 45 46.37	1.9123	4 50 4.7	14.983
3	23 47 41.14	1.9135	4 35 4.5	15.023
4	23 49 35.99	1.9148	4 20 1.9	15.062
5	23 51 30.91	1.9161	4 4 57.0	15.100
6	23 53 25.92	1.9176	3 49 49.9	15.138
7	23 55 21.02	1.9192	3 34 40.6	15.173
8	23 57 16.22	1.9208	3 19 29.1	15.208
9	23 59 11.52	1.9226	3 4 15.5	15.243
10	0 1 6.93	1.9243	2 48 59.9	15.277
11	0 3 2.44	1.9262	2 33 42.3	15.309
12	0 4 58.07	1.9282	2 18 22.8	15.341
13	0 6 53.82	1.9303	2 3 1.4	15.372
14	0 8 49.70	1.9324	1 47 38.2	15.402
15	0 10 45.71	1.9347	1 32 13.2	15.431
16	0 12 41.86	1.9370	1 16 46.5	15.459
17	0 14 38.15	1.9394	1 1 18.1	15.486
18	0 16 34.59	1.9419	0 45 48.2	15.512
19	0 18 31.18	1.9445	0 30 16.7	15.537
20	0 20 27.93	1.9473	S. 0 14 43.8	15.560
21	0 22 24.85	1.9500	N. 0 0 50.5	15.583
22	0 24 21.93	1.9528	0 16 26.2	15.605
23	0 26 19.19	1.9558	0 32 3.1	15.626
24	0 28 16.63	1.9589	N. 0 47 41.3	15.646

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY, DECEMBER 1.			
	h m s	s	° ′ ″	″
0	0 28 16.63	1.9589	N. 0 47 41.3	15.646

PHASES OF THE MOON.

		d	h	m
○	Full Moon . . . . Nov.	6	3	48.1
☾	Last Quarter	12	19	19.5
●	New Moon	20	8	49.4
☽	First Quarter	28	13	41.9

		d	h
☾	Perigee . . . . . Nov.	8	6.2
☾	Apogee	24	4.8

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	115 0 19	3155	116 27 22	3138	117 54 46	3121	119 22 30	3103
	Antares	W.	84 11 28	2797	85 45 59	2782	87 20 51	2766	88 56 3	2750
	α Arietis	E.	64 46 16	2869	63 13 18	2855	61 40 2	2842	60 6 29	2829
	Saturn	E.	74 15 32	2781	72 40 39	2766	71 5 26	2750	69 29 53	2734
	Aldebaran	E.	95 3 2	2846	93 29 34	2831	91 55 46	2815	90 21 38	2799
2	Antares	W.	96 57 29	2667	98 34 53	2650	100 12 40	2632	101 50 51	2615
	α Aquilæ	W.	54 32 24	4082	55 42 43	4010	56 54 13	3941	58 6 51	3877
	α Arietis	E.	52 14 24	2763	50 39 7	2750	49 3 34	2738	47 27 45	2727
	Saturn	E.	61 26 47	2654	59 49 5	2637	58 11 0	2620	56 32 32	2604
	Aldebaran	E.	82 25 38	2717	80 49 21	2700	79 12 41	2684	77 35 39	2667
3	Antares	W.	110 7 40	2528	111 48 14	2511	113 29 12	2493	115 10 35	2476
	α Aquilæ	W.	64 25 16	3607	65 43 43	3561	67 3 0	3517	68 23 5	3476
	Fomalhaut	W.	31 31 41	3262	32 56 37	3182	34 23 8	3109	35 51 7	3042
	Saturn	E.	48 14 32	2520	46 33 47	2504	44 52 40	2489	43 11 11	2473
	Aldebaran	E.	69 24 53	2585	67 45 37	2569	66 5 59	2553	64 26 0	2538
	Pollux	E.	113 10 34	2529	111 30 1	2511	109 49 3	2494	108 7 41	2476
4	α Aquilæ	W.	75 14 17	3301	76 38 27	3271	78 3 12	3244	79 28 29	3219
	Fomalhaut	W.	43 29 20	2789	45 4 2	2750	46 39 36	2713	48 15 59	2679
	Saturn	E.	34 38 22	2400	32 54 47	2388	31 10 55	2376	29 26 46	2365
	Aldebaran	E.	56 0 47	2465	54 18 45	2452	52 36 24	2440	50 53 46	2429
	Pollux	E.	99 34 47	2392	97 51 1	2376	96 6 51	2360	94 22 19	2344
5	α Aquilæ	W.	86 41 50	3116	88 9 39	3101	89 37 47	3088	91 6 11	3076
	Fomalhaut	W.	56 28 32	2536	58 8 55	2513	59 49 50	2490	61 31 17	2470
	α Pegasi	W.	38 59 37	3251	40 24 46	3168	41 51 33	3093	43 19 51	3026
	Aldebaran	E.	42 17 0	2386	40 33 5	2381	38 49 3	2378	37 4 56	2378
	Pollux	E.	85 34 7	2272	83 47 26	2258	82 0 24	2245	80 13 3	2233
	Regulus	E.	122 5 35	2287	120 19 16	2272	118 32 35	2258	116 45 34	2245
6	α Aquilæ	W.	98 31 0	3047	100 0 14	3047	101 29 28	3050	102 58 38	3056
	Fomalhaut	W.	70 5 15	2384	71 49 12	2370	73 33 30	2357	75 18 6	2346
	α Pegasi	W.	50 59 56	2772	52 35 0	2735	54 10 54	2700	55 47 35	2669
	Pollux	E.	71 11 54	2177	69 22 52	2168	67 33 37	2159	65 44 8	2151
	Regulus	E.	107 45 57	2188	105 57 12	2178	104 8 12	2169	102 18 58	2161
7	α Aquilæ	W.	110 21 54	3119	111 49 40	3141	113 17 0	3167	114 43 49	3197
	Fomalhaut	W.	84 4 47	2304	85 50 41	2299	87 36 44	2294	89 22 53	2290
	α Pegasi	W.	64 0 20	2551	65 40 23	2533	67 20 51	2517	69 1 40	2504
	Pollux	E.	56 33 52	2118	54 43 21	2114	52 52 43	2110	51 1 59	2107
	Regulus	E.	93 9 58	2129	91 19 42	2124	89 29 19	2120	87 38 50	2116
8	Fomalhaut	W.	98 14 30	2287	100 0 49	2289	101 47 4	2292	103 33 15	2297
	α Pegasi	W.	77 29 41	2461	79 11 50	2457	80 54 4	2454	82 36 22	2452
	Saturn	W.	24 1 2	2132	25 51 13	2126	27 41 33	2121	29 32 0	2117
	Pollux	E.	41 47 24	2099	39 56 24	2100	38 5 25	2101	36 14 28	2103
	Regulus	E.	78 25 24	2109	76 34 38	2109	74 43 52	2110	72 53 8	2112
	Venus	E.	109 20 3	2350	107 35 17	2352	105 50 33	2353	104 5 51	2355
9	α Pegasi	W.	91 7 55	2462	92 50 1	2467	94 32 0	2474	96 13 49	2483

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	120 50 36	3086	122 19 3	3068	123 47 52	3050	125 17 3	3031
	Antares	W.	90 31 37	2734	92 7 32	2717	93 43 49	2701	95 20 28	2684
	α Arietis	E.	58 32 39	2815	56 58 31	2802	55 24 6	2789	53 49 24	2776
	Saturn	E.	67 53 58	2718	66 17 42	2702	64 41 6	2686	63 4 7	2670
	Aldebaran	E.	88 47 9	2783	87 12 19	2766	85 37 7	2750	84 1 33	2734
2	Antares	W.	103 29 25	2598	105 8 23	2580	106 47 45	2563	108 27 31	2546
	α Aquilæ	W.	59 20 34	3818	60 35 18	3761	61 51 1	3707	63 7 41	3655
	α Arietis	E.	45 51 41	2716	44 15 23	2706	42 38 51	2697	41 2 7	2687
	Saturn	E.	54 53 42	2587	53 14 29	2570	51 34 53	2553	49 54 54	2537
	Aldebaran	E.	75 58 15	2650	74 20 28	2634	72 42 19	2617	71 3 47	2601
3	Antares	W.	116 52 22	2459	118 34 33	2443	120 17 7	2426	122 0 6	2409
	α Aquilæ	W.	69 43 56	3437	71 5 31	3400	72 27 47	3365	73 50 43	3332
	Fomalhaut	W.	37 20 28	2982	38 51 3	2928	40 22 46	2878	41 55 33	2831
	Saturn	E.	41 29 20	2458	39 47 7	2443	38 4 33	2428	36 21 38	2414
	Aldebaran	E.	62 45 39	2522	61 4 57	2507	59 23 54	2493	57 42 30	2479
	Pollux	E.	106 25 54	2459	104 43 43	2442	103 1 8	2425	101 18 9	2409
4	α Aquilæ	W.	80 54 16	3195	82 20 32	3173	83 47 14	3152	85 14 21	3133
	Fomalhaut	W.	49 53 7	2646	51 30 59	2616	53 9 32	2588	54 48 44	2561
	Saturn	E.	27 42 21	2355	25 57 42	2348	24 12 52	2343	22 27 55	2337
	Aldebaran	E.	49 10 53	2419	47 27 45	2409	45 44 22	2400	44 0 46	2392
	Pollux	E.	92 37 24	2329	90 52 7	2314	89 6 28	2300	87 20 28	2286
5	α Aquilæ	W.	92 34 50	3066	94 3 41	3059	95 32 41	3053	97 1 48	3049
	Fomalhaut	W.	63 13 13	2450	64 55 36	2432	66 38 25	2415	68 21 39	2399
	α Pegasi	W.	44 49 32	2965	46 20 29	2910	47 52 35	2859	49 25 46	2814
	Aldebaran	E.	35 20 49	2379	33 36 44	2383	31 52 45	2391	30 8 57	2403
	Pollux	E.	78 25 24	2220	76 37 27	2209	74 49 12	2198	73 0 41	2187
	Regulus	E.	114 58 13	2233	113 10 34	2222	111 22 39	2210	109 34 26	2199
6	α Aquilæ	W.	104 27 41	3064	105 56 35	3073	107 25 18	3085	108 53 46	3101
	Fomalhaut	W.	77 2 58	2336	78 48 5	2326	80 33 27	2317	82 19 2	2310
	α Pegasi	W.	57 24 57	2640	59 2 57	2613	60 41 34	2590	62 20 43	2569
	Pollux	E.	63 54 26	2143	62 4 33	2136	60 14 29	2130	58 24 15	2124
	Regulus	E.	100 29 32	2153	98 39 54	2146	96 50 5	2140	95 0 6	2134
7	α Aquilæ	W.	116 10 2	3230	117 35 36	3266	119 0 27	3306	120 24 31	3350
	Fomalhaut	W.	91 9 8	2287	92 55 26	2285	94 41 47	2285	96 28 9	2286
	τ Pegasi	W.	70 42 47	2492	72 24 11	2482	74 5 49	2473	75 47 40	2466
	Pollux	E.	49 11 10	2104	47 20 17	2102	45 29 21	2101	43 38 23	2100
	Regulus	E.	85 48 15	2113	83 57 36	2111	82 6 54	2110	80 16 10	2109
8	Fomalhaut	W.	105 19 19	2302	107 5 15	2309	108 51 1	2317	110 36 36	2325
	α Pegasi	W.	84 18 43	2452	86 1 4	2453	87 43 24	2455	89 25 42	2458
	Saturn	W.	31 22 33	2115	33 13 10	2114	35 3 49	2113	36 54 28	2114
	Pollux	E.	34 23 33	2105	32 32 42	2108	30 41 55	2112	28 51 14	2117
	Regulus	E.	71 2 26	2114	69 11 48	2116	67 21 14	2120	65 30 45	2124
	Venus	E.	102 21 11	2357	100 36 35	2360	98 52 3	2364	97 7 36	2368
9	α Pegasi	W.	97 55 26	2492	99 36 50	2502	101 18 0	2513	102 58 54	2526

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
9	SATURN	W.	38 45 6	2116	40 35 41	2119	42 26 11	2122	44 16 37	2126
	Pollux	E.	27 0 40	2121	25 10 13	2127	23 19 55	2133	21 29 46	2141
	Regulus	E.	63 40 23	2129	61 50 8	2134	60 0 0	2139	58 10 0	2145
	VENUS	E.	95 23 14	2373	93 38 59	2378	91 54 52	2383	90 10 53	2389
	Spica	E.	117 42 18	2120	115 51 50	2125	114 1 28	2130	112 11 14	2135
10	SATURN	W.	53 26 54	2155	55 16 30	2162	57 5 55	2170	58 55 8	2178
	Aldebaran	W.	32 46 20	2330	34 31 36	2323	36 17 2	2319	38 2 34	2317
	Regulus	E.	49 2 39	2184	47 13 47	2194	45 25 10	2203	43 36 47	2213
	VENUS	E.	81 33 26	2427	79 50 30	2436	78 7 47	2445	76 25 17	2455
	Spica	E.	103 2 19	2169	101 13 4	2176	99 24 0	2184	97 35 9	2193
	SUN	E.	127 7 42	2474	125 25 52	2482	123 44 14	2491	122 2 48	2500
11	SATURN	W.	67 58 3	2223	69 45 57	2233	71 33 35	2243	73 20 59	2253
	Aldebaran	W.	46 50 16	2328	48 35 35	2333	50 20 47	2339	52 5 50	2345
	Regulus	E.	34 38 55	2274	32 52 17	2288	31 5 59	2302	29 20 2	2317
	VENUS	E.	67 56 19	2507	66 15 16	2519	64 34 29	2530	62 53 58	2542
	Spica	E.	88 34 16	2241	86 46 49	2251	84 59 37	2261	83 12 40	2271
	SUN	E.	113 39 1	2551	111 58 59	2562	110 19 12	2573	108 39 40	2585
12	SATURN	W.	82 14 8	2307	83 59 58	2318	85 45 32	2329	87 30 49	2340
	Aldebaran	W.	60 48 29	2385	62 32 25	2395	64 16 7	2405	65 59 35	2414
	Pollux	W.	16 29 12	2336	18 14 19	2346	19 59 12	2355	21 43 51	2365
	VENUS	E.	54 35 29	2602	52 56 37	2615	51 18 3	2627	49 39 45	2640
	Spica	E.	74 21 52	2326	72 36 31	2337	70 51 26	2349	69 6 38	2361
	SUN	E.	100 26 0	2644	98 48 5	2656	97 10 26	2668	95 33 3	2680
13	SATURN	W.	96 13 12	2396	97 56 52	2408	99 40 15	2419	101 23 22	2431
	Aldebaran	W.	74 33 26	2465	76 15 28	2475	77 57 16	2486	79 38 49	2497
	Pollux	W.	30 23 30	2417	32 6 40	2428	33 49 35	2438	35 32 15	2449
	VENUS	E.	41 32 32	2704	39 55 57	2716	38 19 38	2729	36 43 36	2741
	Spica	E.	60 26 48	2419	58 43 40	2430	57 0 48	2441	55 18 12	2453
	SUN	E.	87 30 17	2742	85 54 33	2754	84 19 5	2766	82 43 53	2779
14	SATURN	W.	109 54 58	2487	111 36 30	2498	113 17 46	2509	114 58 47	2520
	Aldebaran	W.	88 2 47	2551	89 42 49	2561	91 22 37	2572	93 2 10	2583
	Pollux	W.	44 1 44	2504	45 42 52	2515	47 23 45	2525	49 4 23	2535
	VENUS	E.	28 47 36	2804	27 13 13	2816	25 39 7	2829	24 5 16	2842
	Spica	E.	46 49 19	2511	45 8 21	2522	43 27 39	2534	41 47 13	2545
	SUN	E.	74 51 55	2839	73 18 18	2851	71 44 56	2863	70 11 49	2875
15	Aldebaran	W.	101 16 12	2637	102 54 16	2648	104 32 6	2659	106 9 41	2670
	Pollux	W.	57 23 58	2587	59 3 11	2597	60 42 10	2607	62 20 55	2617
	Regulus	W.	21 9 48	2668	22 47 11	2669	24 24 32	2671	26 1 51	2674
	Spica	E.	33 28 58	2603	31 50 7	2615	30 11 32	2627	28 33 13	2639
	SUN	E.	62 30 0	2931	60 58 22	2942	59 26 57	2954	57 55 46	2965
16	Pollux	W.	70 31 24	2664	72 8 52	2674	73 46 7	2683	75 23 10	2692
	Regulus	W.	34 7 12	2698	35 43 54	2705	37 20 27	2712	38 56 51	2719
	SUN	E.	50 23 15	3018	48 53 24	3029	47 23 47	3039	45 54 22	3048
17	Pollux	W.	83 25 24	2736	85 1 16	2744	86 36 57	2753	88 12 26	2762

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
9	SATURN	W.	46 6 57	2131	47 57 9	2136	49 47 13	2142	51 37 8	2148
	Pollux	E.	19 39 49	2150	17 50 6	2161	16 0 40	2174	14 11 33	2188
	Regulus	E.	56 20 10	2152	54 30 30	2160	52 41 2	2167	50 51 45	2175
	VENUS	E.	88 27 3	2396	86 43 23	2403	84 59 53	2411	83 16 34	2419
	Spica	E.	110 21 8	2141	108 31 11	2147	106 41 23	2154	104 51 46	2161
10	SATURN	W.	60 44 10	2186	62 32 59	2195	64 21 34	2204	66 9 55	2213
	Aldebaran	W.	39 48 9	2316	41 33 45	2317	43 19 19	2320	45 4 50	2324
	Regulus	E.	41 48 38	2223	40 0 45	2235	38 13 10	2247	36 25 53	2260
	VENUS	E.	74 43 1	2465	73 0 59	2475	71 19 11	2485	69 37 37	2496
	Spica	E.	95 46 30	2202	93 58 5	2211	92 9 54	2221	90 21 58	2231
	SUN	E.	120 21 35	2510	118 40 36	2520	116 59 50	2530	115 19 18	2540
11	SATURN	W.	75 8 9	2263	76 55 3	2274	78 41 40	2285	80 28 2	2296
	Aldebaran	W.	53 50 44	2352	55 35 28	2360	57 20 0	2368	59 4 20	2376
	Regulus	E.	27 34 28	2335	25 49 20	2354	24 4 39	2375	22 20 28	2398
	VENUS	E.	61 13 43	2554	59 33 45	2566	57 54 3	2578	56 14 38	2590
	Spica	E.	81 25 58	2282	79 39 33	2293	77 53 23	2304	76 7 30	2315
	SUN	E.	107 0 24	2596	105 21 24	2608	103 42 40	2620	102 4 12	2632
12	SATURN	W.	89 15 51	2351	91 0 36	2363	92 45 4	2374	94 29 16	2385
	Aldebaran	W.	67 42 50	2424	69 25 51	2434	71 8 37	2444	72 51 9	2455
	Pollux	W.	23 28 16	2375	25 12 27	2385	26 56 23	2396	28 40 4	2406
	VENUS	E.	48 1 44	2653	46 24 0	2666	44 46 34	2678	43 9 25	2691
	Spica	E.	67 22 7	2373	65 37 53	2384	63 53 55	2395	62 10 13	2407
	SUN	E.	93 55 57	2692	92 19 7	2705	90 42 34	2717	89 6 17	2730
13	SATURN	W.	103 6 13	2442	104 48 48	2453	106 31 7	2464	108 13 10	2475
	Aldebaran	W.	81 20 7	2508	83 1 10	2519	84 41 57	2530	86 22 29	2540
	Pollux	W.	37 14 40	2460	38 56 49	2471	40 38 43	2482	42 20 21	2493
	VENUS	E.	35 7 51	2754	33 32 23	2766	31 57 11	2779	30 22 15	2792
	Spica	E.	53 35 53	2465	51 53 50	2476	50 12 4	2487	48 30 33	2499
	SUN	E.	81 8 58	2792	79 34 19	2803	77 59 55	2815	76 25 47	2828
14	SATURN	W.	116 39 33	2531	118 20 4	2542	120 0 19	2552	121 40 19	2562
	Aldebaran	W.	94 41 28	2594	96 20 31	2605	97 59 19	2616	99 37 53	2626
	Pollux	W.	50 44 47	2546	52 24 56	2556	54 4 51	2567	55 44 31	2577
	VENUS	E.	22 31 42	2854	20 58 24	2866	19 25 22	2879	17 52 36	2891
	Spica	E.	40 7 2	2556	38 27 7	2568	36 47 28	2580	35 8 5	2591
	SUN	E.	68 38 58	2887	67 6 22	2898	65 34 0	2909	64 1 53	2920
15	Aldebaran	W.	107 47 1	2681	109 24 7	2691	111 0 59	2702	112 37 36	2713
	Pollux	W.	63 59 27	2627	65 37 46	2637	67 15 51	2646	68 53 44	2655
	Regulus	W.	27 39 7	2677	29 16 18	2681	30 53 24	2686	32 30 22	2692
	Spica	E.	26 55 11	2652	25 17 26	2665	23 39 59	2679	22 2 50	2693
	SUN	E.	56 24 49	2975	54 54 5	2986	53 23 35	2997	51 53 18	3008
16	Pollux	W.	77 0 0	2701	78 36 38	2710	80 13 5	2719	81 49 20	2727
	Regulus	W.	40 33 6	2726	42 9 11	2733	43 45 7	2741	45 20 52	2748
	SUN	E.	44 25 9	3058	42 56 8	3069	41 27 20	3079	39 58 45	3089
17	Pollux	W.	89 47 44	2770	91 22 51	2779	92 57 47	2787	94 32 32	2795

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
17	Regulus	W.	46 56 28	2756	48 31 54	2763	50 7 10	2771	51 42 16	2779
	Sun	E.	38 30 22	3100	37 2 12	3110	35 34 15	3120	34 6 30	3130
22	Sun	W.	18 25 12	3441	19 46 42	3442	21 8 11	3444	22 29 37	3446
	Fomalhaut	E.	75 7 14	3225	73 41 35	3234	72 16 6	3243	70 50 48	3252
	α Pegasi	E.	96 5 43	3373	94 42 56	3378	93 20 15	3382	91 57 38	3386
23	Sun	W.	29 16 4	3461	30 37 11	3464	31 58 15	3467	33 19 16	3469
	Fomalhaut	E.	63 46 53	3298	62 22 39	3308	60 58 37	3319	59 34 47	3330
	α Pegasi	E.	85 5 47	3410	83 43 42	3415	82 21 43	3421	80 59 51	3428
24	Sun	W.	40 3 45	3479	41 24 33	3480	42 45 19	3480	44 6 5	3481
	Fomalhaut	E.	52 38 57	3392	51 16 31	3406	49 54 21	3422	48 32 29	3438
	α Pegasi	E.	74 12 16	3461	72 51 8	3468	71 30 8	3476	70 9 17	3484
	α Arietis	E.	115 56 58	3153	114 29 53	3153	113 2 47	3153	111 35 41	3152
	Saturn	E.	124 14 25	3068	122 45 36	3069	121 16 48	3069	119 48 1	3069
25	Sun	W.	50 49 52	3479	52 10 40	3477	53 31 30	3474	54 52 23	3472
	Fomalhaut	E.	41 48 18	3543	40 28 41	3570	39 9 34	3600	37 51 0	3635
	α Pegasi	E.	63 27 24	3531	62 7 33	3542	60 47 55	3553	59 28 29	3565
	α Arietis	E.	104 19 52	3145	102 52 37	3143	101 25 19	3140	99 57 58	3138
	Saturn	E.	112 24 5	3067	110 55 15	3065	109 26 23	3063	107 57 28	3060
26	Sun	W.	61 37 36	3453	62 58 53	3448	64 20 15	3442	65 41 44	3437
	α Pegasi	E.	52 55 4	3643	51 37 16	3663	50 19 50	3685	49 2 47	3709
	α Arietis	E.	92 40 17	3119	91 12 31	3114	89 44 39	3109	88 16 40	3104
	Saturn	E.	100 32 2	3044	99 2 44	3039	97 33 19	3034	96 3 48	3028
	Aldebaran	E.	123 0 58	3130	121 33 25	3124	120 5 44	3117	118 37 55	3109
27	Sun	W.	72 31 0	3399	73 53 18	3390	75 15 46	3380	76 38 25	3370
	α Arietis	E.	80 54 59	3071	79 26 14	3064	77 57 20	3056	76 28 16	3047
	Saturn	E.	88 34 19	2994	87 3 59	2986	85 33 29	2977	84 2 48	2968
	Aldebaran	E.	111 16 27	3068	109 47 38	3059	108 18 38	3049	106 49 26	3039
28	Sun	W.	83 34 41	3313	84 58 37	3301	86 22 47	3287	87 47 13	3273
	α Aquilæ	W.	43 21 0	5341	44 13 37	5194	45 8 3	5059	46 4 12	4935
	α Arietis	E.	69 0 11	3000	67 29 59	2990	65 59 34	2979	64 28 55	2969
	Saturn	E.	76 26 21	2917	74 54 24	2905	73 22 12	2893	71 49 45	2881
	Aldebaran	E.	99 20 12	2983	97 49 38	2971	96 18 50	2959	94 47 46	2946
29	Sun	W.	94 53 35	3199	96 19 45	3183	97 46 15	3166	99 13 5	3148
	α Aquilæ	W.	51 8 6	4427	52 13 3	4344	53 19 14	4265	54 26 39	4191
	α Arietis	E.	56 52 13	2912	55 20 9	2900	53 47 50	2888	52 15 16	2876
	Saturn	E.	64 3 21	2813	62 29 10	2799	60 54 41	2784	59 19 53	2769
	Aldebaran	E.	87 8 12	2876	85 35 23	2861	84 2 15	2846	82 28 47	2831
30	Sun	W.	106 32 32	3059	108 1 32	3040	109 30 55	3021	111 0 42	3001
	α Aquilæ	W.	60 20 7	3879	61 33 48	3825	62 48 24	3773	64 3 54	3725
	α Arietis	E.	44 28 42	2821	42 54 40	2811	41 20 26	2801	39 46 0	2793
	Saturn	E.	51 20 40	2689	49 43 45	2672	48 6 27	2655	46 28 47	2638
	Aldebaran	E.	74 36 24	2750	73 0 51	2733	71 24 56	2716	69 48 38	2700
	Pollux	E.	118 24 55	2698	116 48 12	2681	115 11 7	2663	113 33 37	2644

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
17	Regulus	W.	53 17 12	2786	54 51 58	2794	56 26 34	2801	58 1 0	2809
	Sun	E.	32 38 57	3140	31 11 36	3150	29 44 27	3160	28 17 30	3170
22	Sun	W.	23 51 1	3449	25 12 22	3452	26 33 39	3455	27 54 53	3458
	Fomalhaut	E.	69 25 40	3261	68 0 42	3270	66 35 55	3279	65 11 18	3288
	α Pegasi	E.	90 35 5	3390	89 12 37	3395	87 50 15	3400	86 27 58	3405
23	Sun	W.	34 40 15	3471	36 1 11	3474	37 22 4	3476	38 42 55	3477
	Fomalhaut	E.	58 11 10	3341	56 47 46	3353	55 24 35	3365	54 1 39	3378
	α Pegasi	E.	79 38 6	3434	78 16 27	3440	76 54 56	3447	75 33 32	3454
24	Sun	W.	45 26 50	3481	46 47 35	3481	48 8 20	3481	49 29 5	3481
	Fomalhaut	E.	47 10 56	3456	45 49 43	3475	44 28 51	3496	43 8 22	3518
	α Pegasi	E.	68 48 35	3492	67 28 2	3501	66 7 39	3510	64 47 26	3520
	α Arietis	E.	110 8 34	3151	108 41 26	3150	107 14 17	3148	105 47 6	3146
	Saturn	E.	118 19 14	3070	116 50 28	3069	115 21 41	3069	113 52 54	3068
25	Sun	W.	56 13 18	3469	57 34 16	3466	58 55 18	3462	60 16 25	3458
	Fomalhaut	E.	36 33 3	3672	35 15 46	3715	33 59 15	3764	32 43 35	3816
	α Pegasi	E.	58 9 17	3578	56 50 19	3593	55 31 37	3609	54 13 12	3625
	α Arietis	E.	98 30 34	3135	97 3 7	3131	95 35 35	3127	94 7 58	3123
	Saturn	E.	106 28 30	3058	104 59 29	3055	103 30 24	3052	102 1 15	3048
26	Sun	W.	67 3 19	3431	68 25 1	3423	69 46 52	3415	71 8 51	3407
	α Pegasi	E.	47 46 9	3735	46 29 59	3764	45 14 19	3795	43 59 12	3831
	α Arietis	E.	86 48 35	3098	85 20 23	3091	83 52 3	3085	82 23 35	3078
	Saturn	E.	94 34 10	3022	93 4 25	3015	91 34 31	3009	90 4 29	3002
	Aldebaran	E.	117 9 57	3101	115 41 49	3094	114 13 32	3086	112 45 5	3077
27	Sun	W.	78 1 15	3360	79 24 17	3349	80 47 32	3338	82 11 0	3326
	α Arietis	E.	74 59 1	3038	73 29 36	3029	71 59 59	3020	70 30 11	3010
	Saturn	E.	82 31 55	2959	81 0 51	2949	79 29 34	2939	77 58 4	2928
	Aldebaran	E.	105 20 2	3029	103 50 25	3018	102 20 35	3007	100 50 31	2995
28	Sun	W.	89 11 56	3259	90 36 55	3245	92 2 11	3230	93 27 44	3215
	α Aquilæ	W.	47 1 59	4819	48 1 20	4710	49 2 11	4610	50 4 27	4515
	α Arietis	E.	62 58 3	2958	61 26 57	2946	59 55 37	2935	58 24 2	2924
	Saturn	E.	70 17 2	2868	68 44 3	2855	67 10 47	2842	65 37 13	2828
	Aldebaran	E.	93 16 26	2933	91 44 49	2920	90 12 55	2906	88 40 43	2891
29	Sun	W.	100 40 16	3131	102 7 47	3114	103 35 40	3096	105 3 55	3078
	α Aquilæ	W.	55 35 14	4122	56 44 54	4058	57 55 37	3995	59 7 22	3934
	α Arietis	E.	50 42 27	2865	49 9 23	2853	47 36 4	2842	46 2 30	2831
	Saturn	E.	57 44 44	2753	56 9 15	2737	54 33 25	2721	52 57 13	2705
	Aldebaran	E.	80 55 0	2815	79 20 52	2800	77 46 24	2784	76 11 35	2767
30	Sun	W.	112 30 54	2981	114 1 30	2962	115 32 30	2942	117 3 56	2922
	α Aquilæ	W.	65 20 15	3678	66 37 25	3634	67 55 23	3591	69 14 7	3550
	α Arietis	E.	38 11 23	2787	36 36 37	2782	35 1 45	2778	33 26 48	2775
	Saturn	E.	44 50 43	2621	43 12 17	2604	41 33 27	2586	39 54 13	2569
	Aldebaran	E.	68 11 58	2683	66 34 55	2666	64 57 30	2649	63 19 42	2632
	Pollux	E.	111 55 42	2626	110 17 22	2608	108 38 38	2589	106 59 28	2570

AT GREENWICH APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Semi-diameter.	Sidereal Time of Semi-diameter Passing Meridian.	Equation of Time, to be Subtracted from / Added to Apparent Time.	Diff. for 1 Hour.
		h m s	s	° ′ ″	″	′ ″	s	m s	s
Frid.	1	16 25 41.34	+ 10.773	S. 21 41 0.8	− 24.21	16 15.28	70.18	11 11.04	0.914
Sat.	2	16 30 0.21	10.799	21 50 29.3	23.16	16 15.44	70.27	10 48.79	0.940
SUN.	3	16 34 19.70	10.825	21 59 32.6	22.11	16 15.60	70.35	10 25.91	0.966
Mon.	4	16 38 39.80	+ 10.850	22 8 10.5	− 21.05	16 15.75	70.44	10 2.43	0.991
Tues.	5	16 43 0.49	10.874	22 16 22.7	19.97	16 15.89	70.52	9 38.36	1.015
Wed.	6	16 47 21.75	10.897	22 24 9.0	18.89	16 16.02	70.59	9 13.73	1.038
Thur.	7	16 51 43.57	+ 10.920	22 31 29.2	− 17.79	16 16.15	70.66	8 48.55	1.060
Frid.	8	16 56 5.91	10.941	22 38 23.1	16.69	16 16.28	70.73	8 22.84	1.082
Sat.	9	17 0 28.76	10.962	22 44 50.4	15.58	16 16.40	70.80	7 56.62	1.103
SUN.	10	17 4 52.09	+ 10.982	22 50 50.9	− 14.46	16 16.51	70.86	7 29.92	1.122
Mon.	11	17 9 15.88	11.000	22 56 24.4	13.33	16 16.62	70.92	7 2.76	1.140
Tues.	12	17 13 40.10	11.018	23 1 30.8	12.20	16 16.72	70.97	6 35.17	1.158
Wed.	13	17 18 4.72	+ 11.034	23 6 9.8	− 11.06	16 16.82	71.02	6 7.18	1.174
Thur.	14	17 22 29.71	11.048	23 10 21.4	9.91	16 16.92	71.06	5 38.83	1.188
Frid.	15	17 26 55.04	11.061	23 14 5.3	8.75	16 17.02	71.10	5 10.14	1.201
Sat.	16	17 31 20.67	+ 11.073	23 17 21.3	− 7.59	16 17.11	71.13	4 41.16	1.213
SUN.	17	17 35 46.56	11.084	23 20 9.4	6.42	16 17.19	71.16	4 11.91	1.223
Mon.	18	17 40 12.67	11.093	23 22 29.4	5.25	16 17.26	71.19	3 42.43	1.232
Tues.	19	17 44 38.98	+ 11.100	23 24 21.3	− 4.07	16 17.32	71.22	3 12.76	1.239
Wed.	20	17 49 5.45	11.105	23 25 45.0	2.90	16 17.39	71.24	2 42.94	1.245
Thur.	21	17 53 32.03	11.109	23 26 40.4	1.72	16 17.46	71.25	2 13.00	1.249
Frid.	22	17 57 58.69	+ 11.112	23 27 7.5	− 0.54	16 17.52	71.25	1 42.98	1.251
Sat.	23	18 2 25.39	11.113	23 27 6.3	+ 0.64	16 17.57	71.26	1 12.92	1.252
SUN.	24	18 6 52.09	11.112	23 26 36.7	1.83	16 17.62	71.26	0 42.86	1.251
Mon.	25	18 11 18.76	+ 11.110	23 25 38.7	+ 3.01	16 17.66	71.25	0 12.83	1.249
Tues.	26	18 15 45.35	11.106	23 24 12.4	4.19	16 17.70	71.24	0 17.12	1.245
Wed.	27	18 20 11.83	11.101	23 22 17.8	5.36	16 17.75	71.23	0 46.96	1.240
Thur.	28	18 24 38.16	+ 11.094	23 19 55.0	+ 6.54	16 17.79	71.21	1 16.65	1.233
Frid.	29	18 29 4.32	11.086	23 17 4.1	7.71	16 17.83	71.19	1 46.17	1.225
Sat.	30	18 33 30.26	11.076	23 13 45.2	8.87	16 17.86	71.16	2 15.47	1.216
SUN.	31	18 37 55.95	11.065	23 9 58.4	10.03	16 17.88	71.13	2 44.52	1.205
Mon.	32	18 42 21.37	+ 11.053	S. 23 5 43.7	+ 11.19	16 17.89	71.09	3 13.30	1.193

NOTE.—The mean time of semidiameter passing the meridian may be found by subtracting 0s.19 from the sidereal time. The sign − prefixed to the hourly change of declination indicates that south declinations are increasing; the sign + indicates that south declinations are decreasing.

AT GREENWICH MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 Hour.	Apparent Declination.	Diff. for 1 Hour.	Equation of Time, to be Added to / Subtracted from Mean Time.	Diff. for 1 Hour.	Sidereal Time, or Right Ascension of Mean Sun.
		h m s	s	° ′ ″	″	m s	s	h m s
Frid.	1	16 25 43.34	+ 10.770	S. 21 41 5.3	− 24.19	11 10.87	− 0.914	16 36 54.21
Sat.	2	16 30 2.15	10.797	21 50 33.4	23.15	10 48.62	0.940	16 40 50.77
SUN.	3	16 34 21.58	10.822	21 59 36.4	22.10	10 25.74	0.966	16 44 47.33
Mon.	4	16 38 41.62	+ 10.847	22 8 14.0	− 21.04	10 2.26	− 0.991	16 48 43.89
Tues.	5	16 43 2.24	10.871	22 16 26.0	19.96	9 38.20	1.015	16 52 40.44
Wed.	6	16 47 23.43	10.894	22 24 12.0	18.87	9 13.57	1.038	16 56 37.00
Thur.	7	16 51 45.17	+ 10.917	22 31 31.9	− 17.78	8 48.39	− 1.060	17 0 33.56
Frid.	8	16 56 7.44	10.938	22 38 25.4	16.68	8 22.68	1.082	17 4 30.12
Sat.	9	17 0 30.21	10.959	22 44 52.4	15.57	7 56.47	1.103	17 8 26.68
SUN.	10	17 4 53.46	+ 10.979	22 50 52.7	− 14.45	7 29.77	− 1.122	17 12 23.24
Mon.	11	17 9 17.17	10.997	22 56 26.0	13.32	7 2.62	1.140	17 16 19.80
Tues.	12	17 13 41.31	11.014	23 1 32.1	12.19	6 35.04	1.158	17 20 16.36
Wed.	13	17 18 5.85	+ 11.030	23 6 10.9	− 11.05	6 7.06	− 1.174	17 24 12.91
Thur.	14	17 22 30.75	11.045	23 10 22.3	9.90	5 38.72	1.188	17 28 9.47
Frid.	15	17 26 55.99	11.058	23 14 6.0	8.74	5 10.04	1.201	17 32 6.03
Sat.	16	17 31 21.53	+ 11.070	23 17 21.9	− 7.58	4 41.06	− 1.213	17 36 2.59
SUN.	17	17 35 47.33	11.080	23 20 9.9	6.41	4 11.82	1.223	17 39 59.15
Mon.	18	17 40 13.36	11.089	23 22 29.8	5.24	3 42.35	1.232	17 43 55.71
Tues.	19	17 44 39.58	+ 11.096	23 24 21.6	− 4.07	3 12.69	− 1.239	17 47 52.27
Wed.	20	17 49 5.95	11.102	23 25 45.2	2.89	2 42.88	1.245	17 51 48.83
Thur.	21	17 53 32.44	11.106	23 26 40.5	1.72	2 12.95	1.249	17 55 45.39
Frid.	22	17 57 59.01	+ 11.108	23 27 7.5	− 0.54	1 42.94	− 1.251	17 59 41.95
Sat.	23	18 2 25.61	11.109	23 27 6.2	+ 0.64	1 12.89	1.252	18 3 38.50
SUN.	24	18 6 52.22	11.108	23 26 36.6	1.82	0 42.84	1.251	18 7 35.06
Mon.	25	18 11 18.80	+ 11.106	23 25 38.7	+ 3.00	0 12.83	− 1.249	18 11 31.62
Tues.	26	18 15 45.30	11.102	23 24 12.4	4.18	0 17.11	1.245	18 15 28.18
Wed.	27	18 20 11.69	11.097	23 22 17.9	5.36	0 46.94	1.240	18 19 24.74
Thur.	28	18 24 37.93	+ 11.090	23 19 55.2	+ 6.53	1 16.63	− 1.233	18 23 21.30
Frid.	29	18 29 3.99	11.082	23 17 4.4	7.70	1 46.13	1.225	18 27 17.86
Sat.	30	18 33 29.84	11.072	23 13 45.5	8.87	2 15.42	1.216	18 31 14.42
SUN.	31	18 37 55.45	11.061	23 9 58.8	10.03	2 44.47	1.205	18 35 10.98
Mon.	32	18 42 20.78	+ 11.049	S. 23 5 44.3	+ 11.18	3 13.24	− 1.193	18 39 7.54

NOTE.—The semidiameter for mean noon may be assumed the same as that for apparent noon.
The sign − prefixed to the hourly change of declination indicates that south declinations are increasing; the sign + indicates that south declinations are decreasing.

Diff. for 1 Hour, + 9s.8565. (Table III.)

AT GREENWICH MEAN NOON.

Day of the Month.	Day of the Year.	THE SUN'S TRUE LONGITUDE. λ	THE SUN'S TRUE LONGITUDE. λ'	Diff. for 1 Hour.	THE SUN'S LATITUDE.	Logarithm of the Radius Vector of the Earth.	Diff. for 1 Hour.	Mean Time of Sidereal Noon.
		° ′ ″	′ ″	″	″			h m s
1	335	248 11 37.7	11 0.8	152.06	+ 0.23	9.993 8207	− 30.0	7 21 53.20
2	336	249 12 27.6	11 50.5	152.10	0.35	9.993 7498	29.1	7 17 57.29
3	337	250 13 18.4	12 41.1	152.14	0.48	9.993 6812	28.1	7 14 1.37
4	338	251 14 10.1	13 32.7	152.18	+ 0.61	9.993 6150	− 27.0	7 10 5.46
5	339	252 15 2.8	14 25.2	152.22	0.74	9.993 5514	25.9	7 6 9.55
6	340	253 15 56.5	15 18.7	152.26	0.84	9.993 4904	24.8	7 2 13.64
7	341	254 16 51.2	16 13.2	152.30	+ 0.91	9.993 4321	− 23.7	6 58 17.72
8	342	255 17 47.0	17 8.8	152.35	0.95	9.993 3765	22.6	6 54 21.81
9	343	256 18 44.0	18 5.6	152.40	0.96	9.993 3235	21.6	6 50 25.90
10	344	257 19 42.1	19 3.5	152.44	+ 0.94	9.993 2730	− 20.6	6 46 29.98
11	345	258 20 41.3	20 2.5	152.49	0.89	9.993 2248	19.6	6 42 34.07
12	346	259 21 41.6	21 2.6	152.54	0.82	9.993 1789	18.7	6 38 38.16
13	347	260 22 43.1	22 3.9	152.58	+ 0.71	9.993 1352	− 17.8	6 34 42.25
14	348	261 23 45.7	23 6.3	152.63	0.59	9.993 0935	17.0	6 30 46.33
15	349	262 24 49.2	24 9.7	152.67	0.47	9.993 0536	16.2	6 26 50.42
16	350	263 25 53.7	25 14.0	152.71	+ 0.33	9.993 0156	− 15.5	6 22 54.51
17	351	264 26 59.1	26 19.2	152.74	0.20	9.992 9794	14.8	6 18 58.59
18	352	265 28 5.3	27 25.1	152.77	+ 0.09	9.992 9448	14.1	6 15 2.68
19	353	266 29 12.1	28 31.7	152.80	− 0.02	9.992 9119	− 13.4	6 11 6.77
20	354	267 30 19.5	29 38.9	152.82	0.10	9.992 8807	12.7	6 7 10.85
21	355	268 31 27.4	30 46.7	152.84	0.16	9.992 8511	12.0	6 3 14.94
22	356	269 32 35.8	31 54.9	152.86	− 0.20	9.992 8232	− 11.3	5 59 19.03
23	357	270 33 44.6	33 3.4	152.87	0.20	9.992 7970	10.6	5 55 23.11
24	358	271 34 53.6	34 12.2	152.88	0.19	9.992 7725	9.8	5 51 27.20
25	359	272 36 2.8	35 21.2	152.89	− 0.15	9.992 7499	− 9.0	5 47 31.29
26	360	273 37 12.1	36 30.3	152.89	− 0.09	9.992 7292	8.2	5 43 35.37
27	361	274 38 21.5	37 39.5	152.89	+ 0.01	9.992 7104	7.4	5 39 39.46
28	362	275 39 30.8	38 48.6	152.89	+ 0.12	9.992 6938	− 6.5	5 35 43.55
29	363	276 40 40.0	39 57.7	152.88	0.24	9.992 6794	5.5	5 31 47.64
30	364	277 41 49.2	41 6.6	152.88	0.37	9.992 6674	4.5	5 27 51.72
31	365	278 42 58.2	42 15.4	152.87	0.49	9.992 6578	3.4	5 23 55.81
32	366	279 44 7.0	43 24.0	152.86	+ 0.61	9.992 6508	− 2.3	5 19 59.90

NOTE.—The longitudes in the column λ are referred to the true equinox of their own date, while those in the column λ' are referred to the mean equinox of the beginning of the Besselian fictitious year.

Diff. for 1 Hour, −9s.8296. (Table II.)

GREENWICH MEAN TIME.

THE MOON'S

Day of the Month.	SEMIDIAMETER.		HORIZONTAL PARALLAX.				UPPER TRANSIT.		AGE.
	Noon.	Midnight.	Noon.	Diff. for 1 Hour.	Midnight.	Diff. for 1 Hour.	Meridian of Greenwich.	Diff. for 1 Hour.	Noon.
	′ ″	′ ″	′ ″	″	′ ″	″	h m	m	d
1	15 41.3	15 49.2	57 28.8	+ 2.39	57 57.8	+ 2.43	8 6.0	1.88	10.6
2	15 57.2	16 5.1	58 27.1	2.42	58 56.0	2.36	8 52.6	2.01	11.6
3	16 12.7	16 19.7	59 23.8	2.24	59 49.8	2.07	9 43.1	2.21	12.6
4	16 26.1	16 31.7	60 13.4	+ 1.83	60 33.8	+ 1.54	10 38.9	2.44	13.6
5	16 36.2	16 39.6	60 50.4	1.21	61 2.8	0.84	11 40.5	2.67	14.6
6	16 41.7	16 42.5	61 10.5	+ 0.44	61 13.3	+ 0.03	12 46.6	2.81	15.6
7	16 41.9	16 40.1	61 11.3	− 0.37	61 4.6	− 0.74	13 54.2	2.79	16.6
8	16 37.1	16 33.0	60 53.5	1.08	60 38.6	1.38	14 59.5	2.63	17.6
9	16 28.0	16 22.3	60 20.3	1.64	59 59.3	1.84	15 59.7	2.39	18.6
10	16 16.0	16 9.4	59 36.3	− 1.98	59 11.9	− 2.06	16 54.0	2.16	19.6
11	16 2.6	15 55.7	58 46.8	2.10	58 21.4	2.11	17 43.3	1.98	20.6
12	15 48.8	15 42.1	57 56.2	2.08	57 31.6	2.01	18 28.9	1.85	21.6
13	15 35.6	15 29.5	57 7.9	− 1.92	56 45.4	− 1.82	19 12.3	1.79	22.6
14	15 23.7	15 18.3	56 24.2	1.70	56 4.5	1.58	19 55.0	1.78	23.6
15	15 13.3	15 8.8	55 46.2	1.46	55 29.5	1.33	20 38.2	1.82	24.6
16	15 4.6	15 0.9	55 14.3	− 1.21	55 0.5	− 1.09	21 22.8	1.90	25.6
17	14 57.5	14 54.5	54 48.2	0.97	54 37.3	0.85	22 9.5	1.99	26.6
18	14 51.9	14 49.7	54 27.7	0.75	54 19.3	0.65	22 58.4	2.08	27.6
19	14 47.7	14 46.1	54 12.2	− 0.54	54 6.3	− 0.44	23 49.1	2.14	28.6
20	14 44.8	14 43.9	54 1.6	0.34	53 58.2	0.23	ó	. .	29.6
21	14 43.3	14 43.1	53 56.0	− 0.13	53 55.1	− 0.02	0 40.5	2.14	0.8
22	14 43.2	14 43.7	53 55.6	+ 0.10	53 57.5	+ 0.22	1 31.3	2.09	1.8
23	14 44.7	14 46.1	54 1.0	0.36	54 6.1	0.50	2 20.5	2.00	2.8
24	14 47.9	14 50.3	54 13.0	0.65	54 21.7	0.81	3 7.4	1.90	3.8
25	14 53.2	14 56.7	54 32.4	+ 0.98	54 45.1	+ 1.15	3 52.1	1.82	4.8
26	15 0.7	15 5.4	54 59.9	1.32	55 16.9	1.50	4 34.9	1.76	5.8
27	15 10.6	15 16.3	55 36.0	1.68	55 57.2	1.85	5 16.8	1.75	6.8
28	15 22.6	15 29.5	56 20.4	+ 2.01	56 45.5	+ 2.16	5 59.0	1.79	7.8
29	15 36.8	15 44.4	57 12.2	2.28	57 40.1	2.37	6 42.7	1.87	8.8
30	15 52.2	16 0.2	58 8.9	2.42	58 38.2	2.43	7 29.5	2.03	9.8
31	16 8.2	16 15.9	59 7.3	2.39	59 35.6	2.30	8 20.8	2.33	10.8
32	16 23.2	16 29.8	60 2.4	+ 2.14	60 26.9	+ 1.91	9 17.9	2.85	11.8

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 1.			
	h m s	s	° ′ ″	″
0	0 28 16.63	1.9589	N. 0 47 41.3	15.646
1	0 30 14.26	1.9621	1 3 20.6	15.664
2	0 32 12.08	1.9653	1 19 1.0	15.682
3	0 34 10.09	1.9686	1 34 42.4	15.698
4	0 36 8.31	1.9721	1 50 24.8	15.713
5	0 38 6.74	1.9756	2 6 8.0	15.728
6	0 40 5.38	1.9792	2 21 52.1	15.741
7	0 42 4.24	1.9829	2 37 36.9	15.752
8	0 44 3.33	1.9867	2 53 22.3	15.763
9	0 46 2.65	1.9906	3 9 8.4	15.773
10	0 48 2.20	1.9946	3 24 55.0	15.781
11	0 50 1.99	1.9987	3 40 42.1	15.788
12	0 52 2.04	2.0029	3 56 29.5	15.793
13	0 54 2.34	2.0072	4 12 17.2	15.798
14	0 56 2.90	2.0115	4 28 5.2	15.801
15	0 58 3.72	2.0160	4 43 53.4	15.803
16	1 0 4.82	2.0206	4 59 41.6	15.803
17	1 2 6.19	2.0252	5 15 29.8	15.803
18	1 4 7.84	2.0300	5 31 18.0	15.801
19	1 6 9.78	2.0348	5 47 6.0	15.798
20	1 8 12.02	2.0398	6 2 53.7	15.793
21	1 10 14.56	2.0448	6 18 41.1	15.787
22	1 12 17.40	2.0500	6 34 28.1	15.780
23	1 14 20.56	2.0553	N. 6 50 14.7	15.771
	SATURDAY 2.			
0	1 16 24.03	2.0605	N. 7 6 0.6	15.759
1	1 18 27.82	2.0659	7 21 45.8	15.748
2	1 20 31.94	2.0715	7 37 30.3	15.735
3	1 22 36.40	2.0771	7 53 14.0	15.720
4	1 24 41.19	2.0828	8 8 56.7	15.703
5	1 26 46.33	2.0887	8 24 38.3	15.685
6	1 28 51.83	2.0946	8 40 18.9	15.666
7	1 30 57.68	2.1005	8 55 58.2	15.644
8	1 33 3.89	2.1066	9 11 36.2	15.622
9	1 35 10.47	2.1128	9 27 12.8	15.598
10	1 37 17.42	2.1190	9 42 47.9	15.572
11	1 39 24.75	2.1254	9 58 21.4	15.544
12	1 41 32.47	2.1319	10 13 53.2	15.515
13	1 43 40.58	2.1384	10 29 23.2	15.483
14	1 45 49.08	2.1450	10 44 51.2	15.450
15	1 47 57.98	2.1518	11 0 17.2	15.416
16	1 50 7.29	2.1587	11 15 41.1	15.380
17	1 52 17.02	2.1656	11 31 2.8	15.342
18	1 54 27.16	2.1725	11 46 22.2	15.302
19	1 56 37.72	2.1797	12 1 39.1	15.260
20	1 58 48.71	2.1868	12 16 53.4	15.217
21	2 1 0.14	2.1941	12 32 5.1	15.172
22	2 3 12.01	2.2014	12 47 14.0	15.124
23	2 5 24.32	2.2088	13 2 20.0	15.075
24	2 7 37.07	2.2164	N. 13 17 23.0	15.024

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 3.			
	h m s	s	° ′ ″	″
0	2 7 37.07	2.2164	N. 13 17 23.0	15.024
1	2 9 50.28	2.2239	13 32 22.9	14.971
2	2 12 3.94	2.2316	13 47 19.5	14.916
3	2 14 18.07	2.2394	14 2 12.8	14.859
4	2 16 32.67	2.2472	14 17 2.6	14.800
5	2 18 47.74	2.2551	14 31 48.8	14.739
6	2 21 3.28	2.2631	14 46 31.3	14.677
7	2 23 19.30	2.2711	15 1 10.0	14.611
8	2 25 35.81	2.2793	15 15 44.6	14.543
9	2 27 52.81	2.2874	15 30 15.2	14.475
10	2 30 10.30	2.2957	15 44 41.6	14.403
11	2 32 28.29	2.3040	15 59 3.6	14.329
12	2 34 46.78	2.3123	16 13 21.1	14.254
13	2 37 5.77	2.3208	16 27 34.1	14.177
14	2 39 25.27	2.3293	16 41 42.3	14.096
15	2 41 45.29	2.3379	16 55 45.6	14.014
16	2 44 5.82	2.3464	17 9 44.0	13.930
17	2 46 26.86	2.3551	17 23 37.2	13.843
18	2 48 48.43	2.3639	17 37 25.1	13.754
19	2 51 10.53	2.3727	17 51 7.7	13.663
20	2 53 33.15	2.3814	18 4 44.7	13.569
21	2 55 56.30	2.3903	18 18 16.0	13.473
22	2 58 19.98	2.3992	18 31 41.5	13.376
23	3 0 44.20	2.4081	N. 18 45 1.1	13.276
	MONDAY 4.			
0	3 3 8.95	2.4170	N. 18 58 14.6	13.173
1	3 5 34.24	2.4260	19 11 21.9	13.069
2	3 8 0.07	2.4351	19 24 22.9	12.962
3	3 10 26.45	2.4441	19 37 17.3	12.852
4	3 12 53.36	2.4531	19 50 5.1	12.740
5	3 15 20.82	2.4622	20 2 46.1	12.626
6	3 17 48.82	2.4713	20 15 20.2	12.509
7	3 20 17.37	2.4803	20 27 47.2	12.390
8	3 22 46.46	2.4894	20 40 7.0	12.268
9	3 25 16.10	2.4985	20 52 19.4	12.145
10	3 27 46.28	2.5076	21 4 24.4	12.019
11	3 30 17.01	2.5167	21 16 21.7	11.890
12	3 32 48.28	2.5257	21 28 11.2	11.760
13	3 35 20.09	2.5348	21 39 52.8	11.627
14	3 37 52.45	2.5438	21 51 26.4	11.491
15	3 40 25.35	2.5528	22 2 51.8	11.353
16	3 42 58.79	2.5618	22 14 8.8	11.213
17	3 45 32.77	2.5708	22 25 17.3	11.070
18	3 48 7.28	2.5796	22 36 17.2	10.925
19	3 50 42.32	2.5884	22 47 8.3	10.778
20	3 53 17.89	2.5973	22 57 50.5	10.628
21	3 55 53.99	2.6060	23 8 23.6	10.476
22	3 58 30.61	2.6147	23 18 47.6	10.322
23	4 1 7.75	2.6233	23 29 2.2	10.164
24	4 3 45.41	2.6319	N. 23 39 7.3	10.006

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 5.			
	h m s	s	° ′ ″	″
0	4 3 45.41	2.6319	N.23 39 7.3	10.006
1	4 6 23.58	2.6404	23 49 2.9	9.845
2	4 9 2.26	2.6488	23 58 48.7	9.682
3	4 11 41.43	2.6571	24 8 24.7	9.516
4	4 14 21.11	2.6653	24 17 50.6	9.348
5	4 17 1.27	2.6734	24 27 6.4	9.178
6	4 19 41.92	2.6815	24 36 11.9	9.005
7	4 22 23.05	2.6894	24 45 7.0	8.831
8	4 25 4.65	2.6973	24 53 51.6	8.654
9	4 27 46.72	2.7049	25 2 25.5	8.476
10	4 30 29.24	2.7124	25 10 48.7	8.296
11	4 33 12.21	2.7199	25 19 1.0	8.113
12	4 35 55.63	2.7273	25 27 2.2	7.928
13	4 38 39.49	2.7345	25 34 52.3	7.742
14	4 41 23.77	2.7415	25 42 31.2	7.553
15	4 44 8.47	2.7484	25 49 58.7	7.363
16	4 46 53.58	2.7551	25 57 14.7	7.171
17	4 49 39.09	2.7617	26 4 19.2	6.978
18	4 52 24.98	2.7681	26 11 12.0	6.781
19	4 55 11.25	2.7743	26 17 52.9	6.583
20	4 57 57.90	2.7804	26 24 22.0	6.385
21	5 0 44.91	2.7862	26 30 39.1	6.184
22	5 3 32.26	2.7920	26 36 44.1	5.982
23	5 6 19.95	2.7975	N.26 42 36.9	5.778
	WEDNESDAY 6.			
0	5 9 7.96	2.8028	N.26 48 17.4	5.573
1	5 11 56.29	2.8081	26 53 45.6	5.366
2	5 14 44.93	2.8130	26 59 1.3	5.157
3	5 17 33.85	2.8176	27 4 4.4	4.948
4	5 20 23.04	2.8221	27 8 55.0	4.738
5	5 23 12.50	2.8264	27 13 32.9	4.526
6	5 26 2.21	2.8305	27 17 58.1	4.313
7	5 28 52.16	2.8344	27 22 10.4	4.098
8	5 31 42.34	2.8381	27 26 9.9	3.884
9	5 34 32.73	2.8414	27 29 56.5	3.668
10	5 37 23.31	2.8445	27 33 30.1	3.451
11	5 40 14.07	2.8475	27 36 50.6	3.235
12	5 43 5.01	2.8503	27 39 58.0	3.013
13	5 45 56.11	2.8528	27 42 52.2	2.794
14	5 48 47.34	2.8549	27 45 33.3	2.574
15	5 51 38.70	2.8569	27 48 1.1	2.353
16	5 54 30.17	2.8587	27 50 15.7	2.133
17	5 57 21.74	2.8602	27 52 17.0	1.911
18	6 0 13.39	2.8613	27 54 5.0	1 689
19	6 3 5.10	2.8623	27 55 39.7	1.467
20	6 5 56.87	2.8631	27 57 1.0	1.244
21	6 8 48.67	2.8636	27 58 9.0	1.022
22	6 11 40.50	2.8638	27 59 3.6	0.798
23	6 14 32.33	2.8638	27 59 44.8	0.576
24	6 17 24.15	2.8635	N.28 0 12.6	0.353

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 7.			
	h m s	s	° ′ ″	″
0	6 17 24.15	2.8635	N.28 0 12.6	0.353
1	6 20 15.95	2.8630	28 0 27.1	+0.129
2	6 23 7.71	2.8623	28 0 28.2	−0.093
3	6 25 59.42	2.8613	28 0 15.9	0.316
4	6 28 51.06	2.8599	27 59 50.3	0.538
5	6 31 42.61	2.8584	27 59 11.4	0.759
6	6 34 34.07	2.8567	27 58 19.2	0.981
7	6 37 25.41	2.8546	27 57 13.7	1.202
8	6 40 16.62	2.8523	27 55 55.0	1.422
9	6 43 7.69	2.8499	27 54 23.1	1.642
10	6 45 58.61	2.8472	27 52 38.0	1.861
11	6 48 49.35	2.8442	27 50 39.8	2.079
12	6 51 39.91	2.8410	27 48 28.5	2.297
13	6 54 30.27	2.8375	27 46 4.1	2.514
14	6 57 20.41	2.8338	27 43 26.8	2.729
15	7 0 10.33	2.8299	27 40 36.6	2.944
16	7 3 0.00	2.8258	27 37 33.5	3.158
17	7 5 49.42	2.8215	27 34 17.6	3.371
18	7 8 38.58	2.8169	27 30 49.0	3.583
19	7 11 27.46	2.8122	27 27 7.7	3.793
20	7 14 16.04	2.8072	27 23 13.8	4.003
21	7 17 4.31	2.8019	27 19 7.4	4.210
22	7 19 52.27	2.7967	27 14 48.6	4.417
23	7 22 39.91	2.7911	N.27 10 17.4	4.623
	FRIDAY 8.			
0	7 25 27.20	2.7853	N.27 5 33.9	4.826
1	7 28 14.14	2.7793	27 0 38.3	5.028
2	7 31 0.72	2.7733	26 55 30.6	5.228
3	7 33 46.93	2.7669	26 50 10.9	5.428
4	7 36 32.75	2.7604	26 44 39.3	5.625
5	7 39 18.18	2.7538	26 38 55.9	5.821
6	7 42 3.20	2.7469	26 33 0.8	6.015
7	7 44 47.81	2.7400	26 26 54.1	6.208
8	7 47 32.00	2.7329	26 20 35.9	6.398
9	7 50 15.76	2.7257	26 14 6.3	6.587
10	7 52 59.08	2.7183	26 7 25.5	6.773
11	7 55 41.95	2.7108	26 0 33.5	6.959
12	7 58 24.37	2.7031	25 53 30.4	7.142
13	8 1 6.32	2.6953	25 46 16.4	7.323
14	8 3 47.80	2.6873	25 38 51.6	7.502
15	8 6 28.80	2.6793	25 31 16.2	7.679
16	8 9 9.32	2.6713	25 23 30.2	7.854
17	8 11 49.35	2.6630	25 15 33.7	8.027
18	8 14 28.88	2.6547	25 7 26.9	8.198
19	8 17 7.91	2.6463	24 59 9.9	8.367
20	8 19 46.44	2.6378	24 50 42.8	8.534
21	8 22 24.45	2.6292	24 42 5.8	8.698
22	8 25 1.94	2.6205	24 33 19.0	8.862
23	8 27 38.91	2.6118	24 24 22.4	9.023
24	8 30 15.35	2.6029	N.24 15 16.3	9.181

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 9.			
	h m s	s	° ′ ″	″
0	8 30 15.35	2.6029	N.24 15 16.3	9.181
1	8 32 51.26	2.5942	24 6 0.7	9.337
2	8 35 26.64	2.5853	23 56 35.9	9.491
3	8 38 1.49	2.5763	23 47 1.8	9.643
4	8 40 35.80	2.5673	23 37 18.7	9.793
5	8 43 9.56	2.5582	23 27 26.7	9.940
6	8 45 42.78	2.5492	23 17 25.9	10.085
7	8 48 15.46	2.5400	23 7 16.5	10.228
8	8 50 47.59	2.5308	22 56 58.6	10.368
9	8 53 19.16	2.5217	22 46 32.3	10.507
10	8 55 50.18	2.5125	22 35 57.7	10.644
11	8 58 20.66	2.5033	22 25 15.0	10.778
12	9 0 50.58	2.4941	22 14 24.3	10.910
13	9 3 19.95	2.4849	22 3 25.8	11.040
14	9 5 48.77	2.4757	21 52 19.5	11.168
15	9 8 17.03	2.4664	21 41 5.6	11.293
16	9 10 44.74	2.4573	21 29 44.3	11.416
17	9 13 11.90	2.4482	21 18 15.7	11.537
18	9 15 38.52	2.4390	21 6 39.9	11.656
19	9 18 4.58	2.4298	20 54 57.0	11.773
20	9 20 30.09	2.4206	20 43 7.1	11.887
21	9 22 55.05	2.4115	20 31 10.5	11.999
22	9 25 19.47	2.4025	20 19 7.2	12.109
23	9 27 43.35	2.3934	N.20 6 57.4	12.218
	SUNDAY 10.			
0	9 30 6.68	2.3844	N.19 54 41.1	12.324
1	9 32 29.47	2.3754	19 42 18.5	12.428
2	9 34 51.73	2.3665	19 29 49.8	12.529
3	9 37 13.46	2.3577	19 17 15.0	12.628
4	9 39 34.65	2.3488	19 4 34.3	12.726
5	9 41 55.31	2.3399	18 51 47.9	12.822
6	9 44 15.44	2.3312	18 38 55.8	12.915
7	9 46 35.05	2.3226	18 25 58.1	13.007
8	9 48 54.15	2.3139	18 12 55.0	13.096
9	9 51 12.72	2.3053	17 59 46.6	13.183
10	9 53 30.78	2.2968	17 46 33.0	13.269
11	9 55 48.33	2.2883	17 33 14.3	13.352
12	9 58 5.38	2.2800	17 19 50.7	13.433
13	10 0 21.93	2.2717	17 6 22.3	13.513
14	10 2 37.98	2.2633	16 52 49.2	13.590
15	10 4 53.53	2.2552	16 39 11.5	13.666
16	10 7 8.60	2.2472	16 25 29.3	13.740
17	10 9 23.19	2.2391	16 11 42.7	13.812
18	10 11 37.29	2.2311	15 57 51.9	13.882
19	10 13 50.92	2.2233	15 43 56.9	13.950
20	10 16 4.08	2.2155	15 29 57.9	14.017
21	10 18 16.78	2.2078	15 15 54.9	14.082
22	10 20 29.01	2.2001	15 1 48.1	14.144
23	10 22 40.79	2.1926	14 47 37.6	14.205
24	10 24 52.12	2.1852	N.14 33 23.5	14.264

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	MONDAY 11.			
	h m s	s	° ′ ″	″
0	10 24 52.12	2.1852	N.14 33 23.5	14.264
1	10 27 3.01	2.1778	14 19 5.9	14.321
2	10 29 13.45	2.1704	14 4 45.0	14.377
3	10 31 23.46	2.1633	13 50 20.7	14.432
4	10 33 33.04	2.1562	13 35 53.2	14.484
5	10 35 42.20	2.1492	13 21 22.6	14.535
6	10 37 50.94	2.1422	13 6 49.0	14.584
7	10 39 59.26	2.1353	12 52 12.5	14.632
8	10 42 7.18	2.1286	12 37 33.2	14.678
9	10 44 14.69	2.1219	12 22 51.2	14.722
10	10 46 21.81	2.1153	12 8 6.6	14.765
11	10 48 28.53	2.1088	11 53 19.4	14.807
12	10 50 34.87	2.1025	11 38 29.8	14.846
13	10 52 40.83	2.0962	11 23 37.9	14.884
14	10 54 46.41	2.0900	11 8 43.7	14.921
15	10 56 51.63	2.0839	10 53 47.4	14.956
16	10 58 56.48	2.0779	10 38 49.0	14.989
17	11 1 0.98	2.0720	10 23 48.7	15.022
18	11 3 5.12	2.0662	10 8 46.4	15.053
19	11 5 8.92	2.0605	9 53 42.3	15.082
20	11 7 12.38	2.0548	9 38 36.5	15.110
21	11 9 15.50	2.0493	9 23 29.1	15.137
22	11 11 18.30	2.0439	9 8 20.1	15.162
23	11 13 20.77	2.0385	N. 8 53 9.7	15.186
	TUESDAY 12.			
0	11 15 22.92	2.0333	N. 8 37 57.8	15.209
1	11 17 24.76	2.0282	8 22 44.6	15.229
2	11 19 26.30	2.0232	8 7 30.2	15.249
3	11 21 27.54	2.0183	7 52 14.7	15.268
4	11 23 28.49	2.0134	7 36 58.1	15.285
5	11 25 29.15	2.0086	7 21 40.5	15.302
6	11 27 29.53	2.0040	7 6 21.9	15.317
7	11 29 29.63	1.9994	6 51 2.5	15.330
8	11 31 29.46	1.9949	6 35 42.3	15.342
9	11 33 29.02	1.9906	6 20 21.5	15.353
10	11 35 28.33	1.9864	6 5 0.0	15.363
11	11 37 27.39	1.9823	5 49 37.9	15.372
12	11 39 26.20	1.9782	5 34 15.4	15.378
13	11 41 24.77	1.9742	5 18 52.5	15.385
14	11 43 23.10	1.9703	5 3 29.2	15.391
15	11 45 21.21	1.9666	4 48 5.6	15.394
16	11 47 19.09	1.9628	4 32 41.8	15.398
17	11 49 16.75	1.9593	4 17 17.9	15.399
18	11 51 14.20	1.9558	4 1 54.0	15.399
19	11 53 11.45	1.9524	3 46 30.0	15.400
20	11 55 8.49	1.9491	3 31 6.0	15.398
21	11 57 5.34	1.9459	3 15 42.2	15.395
22	11 59 2.00	1.9428	3 0 18.6	15.392
23	12 0 58.47	1.9398	2 44 55.2	15.388
24	12 2 54.77	1.9368	N. 2 29 32.1	15.382

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	WEDNESDAY 13.			
	h m s	s	° ′ ″	″
0	12 2 54.77	1.9368	N. 2 29 32.1	15.382
1	12 4 50.89	1.9340	2 14 9.4	15.375
2	12 6 46.85	1.9313	1 58 47.1	15.367
3	12 8 42.64	1.9286	1 43 25.4	15.358
4	12 10 38.28	1.9261	1 28 4.2	15.348
5	12 12 33.77	1.9236	1 12 43.6	15.338
6	12 14 29.11	1.9213	0 57 23.7	15.326
7	12 16 24.32	1.9190	0 42 4.5	15.313
8	12 18 19.39	1.9168	0 26 46.2	15.298
9	12 20 14.33	1.9146	N. 0 11 28.7	15.284
10	12 22 9.14	1.9126	S. 0 3 47.9	15.268
11	12 24 3.84	1.9108	0 19 3.5	15.252
12	12 25 58.43	1.9089	0 34 18.1	15.234
13	12 27 52.91	1.9072	0 49 31.6	15.215
14	12 29 47.29	1.9055	1 4 43.9	15.196
15	12 31 41.57	1.9039	1 19 55.1	15.176
16	12 33 35.76	1.9024	1 35 5.0	15.154
17	12 35 29.86	1.9010	1 50 13.6	15.132
18	12 37 23.88	1.8997	2 5 20.8	15.108
19	12 39 17.82	1.8985	2 20 26.6	15.085
20	12 41 11.70	1.8974	2 35 31.0	15.060
21	12 43 5.51	1.8963	2 50 33.8	15.033
22	12 44 59.26	1.8953	3 5 35.0	15.007
23	12 46 52.95	1.8944	S. 3 20 34.6	14.979
	THURSDAY 14.			
0	12 48 46.59	1.8937	S. 3 35 32.5	14.951
1	12 50 40.19	1.8929	3 50 28.7	14.922
2	12 52 33.74	1.8923	4 5 23.1	14.891
3	12 54 27.26	1.8918	4 20 15.6	14.860
4	12 56 20.75	1.8913	4 35 6.3	14.828
5	12 58 14.22	1.8909	4 49 55.0	14.795
6	13 0 7.66	1.8905	5 4 41.7	14.761
7	13 2 1.08	1.8903	5 19 26.3	14.727
8	13 3 54.50	1.8902	5 34 8.8	14.691
9	13 5 47.90	1.8901	5 48 49.2	14.654
10	13 7 41.31	1.8902	6 3 27.4	14.617
11	13 9 34.72	1.8902	6 18 3.3	14.579
12	13 11 28.13	1.8903	6 32 36.9	14.540
13	13 13 21.56	1.8906	6 47 8.1	14.500
14	13 15 15.00	1.8908	7 1 36.9	14.460
15	13 17 8.46	1.8912	7 16 3.3	14.418
16	13 19 1.95	1.8917	7 30 27.1	14.376
17	13 20 55.46	1.8923	7 44 48.4	14.333
18	13 22 49.02	1.8929	7 59 7.1	14.289
19	13 24 42.61	1.8935	8 13 23.1	14.245
20	13 26 36.24	1.8943	8 27 36.4	14.199
21	13 28 29.92	1.8951	8 41 47.0	14.153
22	13 30 23.65	1.8959	8 55 54.8	14.106
23	13 32 17.43	1.8969	9 9 59.7	14.058
24	13 34 11.28	1.8980	S. 9 24 1.7	14.008

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 15.			
	h m s	s	° ′ ″	″
0	13 34 11.28	1.8980	S. 9 24 1.7	14.008
1	13 36 5.19	1.8992	9 38 0.7	13.959
2	13 37 59.17	1.9003	9 51 56.7	13.908
3	13 39 53.22	1.9015	10 5 49.7	13.857
4	13 41 47.35	1.9028	10 19 39.6	13.806
5	13 43 41.56	1.9042	10 33 26.4	13.753
6	13 45 35.85	1.9056	10 47 9.9	13.698
7	13 47 30.23	1.9071	11 0 50.2	13.644
8	13 49 24.70	1.9087	11 14 27.2	13.588
9	13 51 19.27	1.9103	11 28 0.8	13.532
10	13 53 13.93	1.9119	11 41 31.0	13.475
11	13 55 8.70	1.9137	11 54 57.8	13.417
12	13 57 3.58	1.9156	12 8 21.1	13.358
13	13 58 58.57	1.9174	12 21 40.8	13.299
14	14 0 53.67	1.9193	12 34 57.0	13.239
15	14 2 48.89	1.9213	12 48 9.5	13.178
16	14 4 44.22	1.9233	13 1 18.3	13.115
17	14 6 39.69	1.9255	13 14 23.3	13.053
18	14 8 35.28	1.9277	13 27 24.6	12.989
19	14 10 31.01	1.9299	13 40 22.0	12.924
20	14 12 26.87	1.9321	13 53 15.5	12.859
21	14 14 22.86	1.9344	14 6 5.1	12.793
22	14 16 19.00	1.9369	14 18 50.7	12.726
23	14 18 15.29	1.9393	S. 14 31 32.2	12.658
	SATURDAY 16.			
0	14 20 11.72	1.9418	S. 14 44 9.7	12.590
1	14 22 8.30	1.9443	14 56 43.0	12.521
2	14 24 5.04	1.9469	15 9 12.1	12.450
3	14 26 1.93	1.9495	15 21 37.0	12.378
4	14 27 58.98	1.9522	15 33 57.6	12.307
5	14 29 56.19	1.9549	15 46 13.9	12.235
6	14 31 53.57	1.9577	15 58 25.8	12.161
7	14 33 51.12	1.9605	16 10 33.2	12.087
8	14 35 48.83	1.9633	16 22 36.2	12.012
9	14 37 46.72	1.9663	16 34 34.6	11.935
10	14 39 44.79	1.9693	16 46 28.4	11.858
11	14 41 43.04	1.9723	16 58 17.6	11.781
12	14 43 41.46	1.9752	17 10 2.1	11.703
13	14 45 40.06	1.9783	17 21 41.9	11.623
14	14 47 38.85	1.9814	17 33 16.9	11.543
15	14 49 37.83	1.9846	17 44 47.0	11.462
16	14 51 37.00	1.9877	17 56 12.3	11.380
17	14 53 36.35	1.9908	18 7 32.6	11.297
18	14 55 35.90	1.9942	18 18 47.9	11.213
19	14 57 35.65	1.9974	18 29 58.2	11.130
20	14 59 35.59	2.0007	18 41 3.5	11.045
21	15 1 35.73	2.0040	18 52 3.6	10.958
22	15 3 36.07	2.0073	19 2 58.5	10.871
23	15 5 36.61	2.0107	19 13 48.1	10.783
24	15 7 37.35	2.0141	S. 19 24 32.5	10.696

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SUNDAY 17.			
	h m s	s	° ′ ″	″
0	15 7 37.35	2.0141	S.19 24 32.5	10.696
1	15 9 38.30	2.0175	19 35 11.6	10.606
2	15 11 39.45	2.0210	19 45 45.3	10.516
3	15 13 40.82	2.0245	19 56 13.5	10.425
4	15 15 42.39	2.0279	20 6 36.2	10.333
5	15 17 44.17	2.0314	20 16 53.4	10.241
6	15 19 46.16	2.0349	20 27 5.0	10.147
7	15 21 48.36	2.0384	20 37 11.0	10.053
8	15 23 50.77	2.0420	20 47 11.3	9.958
9	15 25 53.40	2.0456	20 57 5.9	9.861
10	15 27 56.24	2.0491	21 6 54.7	9.765
11	15 29 59.29	2.0527	21 16 37.7	9.668
12	15 32 2.56	2.0563	21 26 14.8	9.569
13	15 34 6.05	2.0599	21 35 46.0	9.470
14	15 36 9.75	2.0634	21 45 11.2	9.369
15	15 38 13.66	2.0670	21 54 30.3	9.268
16	15 40 17.79	2.0707	22 3 43.4	9.168
17	15 42 22.14	2.0743	22 12 50.4	9.066
18	15 44 26.70	2.0778	22 21 51.3	8.962
19	15 46 31.48	2.0815	22 30 45.9	8.858
20	15 48 36.48	2.0851	22 39 34.3	8.753
21	15 50 41.69	2.0887	22 48 16.3	8.648
22	15 52 47.12	2.0923	22 56 52.0	8.542
23	15 54 52.76	2.0958	S.23 5 21.3	8.435
	MONDAY 18.			
0	15 56 58.61	2.0993	S.23 13 44.2	8.327
1	15 59 4.68	2.1029	23 22 0.6	8.218
2	16 1 10.96	2.1064	23 30 10.4	8.109
3	16 3 17.45	2.1099	23 38 13.7	7.999
4	16 5 24.15	2.1134	23 46 10.3	7.888
5	16 7 31.06	2.1169	23 54 0.3	7.778
6	16 9 38.18	2.1204	24 1 43.6	7.665
7	16 11 45.51	2.1238	24 9 20.1	7.552
8	16 13 53.04	2.1272	24 16 49.8	7.438
9	16 16 0.77	2.1306	24 24 12.6	7.323
10	16 18 8.71	2.1339	24 31 28.6	7.208
11	16 20 16.85	2.1373	24 38 37.6	7.093
12	16 22 25.19	2.1407	24 45 39.7	6.977
13	16 24 33.73	2.1439	24 52 34.8	6.859
14	16 26 42.46	2.1471	24 59 22.8	6.741
15	16 28 51.38	2.1503	25 6 3.7	6.623
16	16 31 0.50	2.1535	25 12 37.5	6.503
17	16 33 9.80	2.1566	25 19 4.1	6.383
18	16 35 19.29	2.1597	25 25 23.5	6.263
19	16 37 28.96	2.1628	25 31 35.7	6.143
20	16 39 38.82	2.1658	25 37 40.6	6.021
21	16 41 48.85	2.1687	25 43 38.2	5.898
22	16 43 59.06	2.1716	25 49 28.4	5.776
23	16 46 9.44	2.1745	25 55 11.3	5.653
24	16 48 19.99	2.1773	S.26 0 46.7	5.528

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	TUESDAY 19.			
	h m s	s	° ′ ″	″
0	16 48 19.99	2.1773	S.26 0 46.7	5.528
1	16 50 30.71	2.1799	26 6 14.7	5.403
2	16 52 41.59	2.1827	26 11 35.2	5.278
3	16 54 52.64	2.1854	26 16 48.1	5.153
4	16 57 3.84	2.1879	26 21 53.4	5.026
5	16 59 15.19	2.1905	26 26 51.2	4.900
6	17 1 26.70	2.1930	26 31 41.4	4.773
7	17 3 38.35	2.1953	26 36 23.9	4.645
8	17 5 50.14	2.1977	26 40 58.8	4.517
9	17 8 2.07	2.2000	26 45 25.9	4.388
10	17 10 14.14	2.2023	26 49 45.3	4.259
11	17 12 26.34	2.2044	26 53 57.0	4.129
12	17 14 38.67	2.2065	26 58 0.9	3.999
13	17 16 51.12	2.2086	27 1 56.9	3.869
14	17 19 3.70	2.2106	27 5 45.1	3.738
15	17 21 16.39	2.2124	27 9 25.4	3.607
16	17 23 29.19	2.2143	27 12 57.9	3.476
17	17 25 42.10	2.2160	27 16 22.5	3.343
18	17 27 55.11	2.2177	27 19 39.1	3.211
19	17 30 8.22	2.2193	27 22 47.8	3.078
20	17 32 21.42	2.2208	27 25 48.5	2.946
21	17 34 34.71	2.2223	27 28 41.3	2.813
22	17 36 48.09	2.2237	27 31 26.1	2.679
23	17 39 1.55	2.2249	S.27 34 2.8	2.545
	WEDNESDAY 20.			
0	17 41 15.08	2.2262	S.27 36 31.5	2.412
1	17 43 28.69	2.2273	27 38 52.2	2.277
2	17 45 42.36	2.2283	27 41 4.7	2.142
3	17 47 56.09	2.2293	27 43 9.2	2.008
4	17 50 9.88	2.2302	27 45 5.7	1.873
5	17 52 23.72	2.2310	27 46 54.0	1.738
6	17 54 37.60	2.2318	27 48 34.3	1.603
7	17 56 51.53	2.2325	27 50 6.4	1.468
8	17 59 5.50	2.2330	27 51 30.4	1.333
9	18 1 19.50	2.2335	27 52 46.3	1.197
10	18 3 33.52	2.2339	27 53 54.0	1.061
11	18 5 47.56	2.2342	27 54 53.6	0.925
12	18 8 1.62	2.2344	27 55 45.0	0.789
13	18 10 15.69	2.2346	27 56 28.3	0.654
14	18 12 29.77	2.2347	27 57 3.5	0.518
15	18 14 43.85	2.2346	27 57 30.5	0.382
16	18 16 57.92	2.2345	27 57 49.3	0.246
17	18 19 11.99	2.2343	27 58 0.0	−0.111
18	18 21 26.04	2.2340	27 58 2.6	+0.025
19	18 23 40.07	2.2337	27 57 57.0	0.161
20	18 25 54.08	2.2333	27 57 43.3	0.296
21	18 28 8.06	2.2328	27 57 21.5	0.432
22	18 30 22.01	2.2321	27 56 51.5	0.568
23	18 32 35.91	2.2313	27 56 13.4	0.703
24	18 34 49.77	2.2306	S.27 55 27.2	0.838

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	THURSDAY 21.			
	h m s	s	° ′ ″	″
0	18 34 49.77	2.2306	S.27 55 27.2	0.838
1	18 37 3.58	2.2298	27 54 32.9	0.973
2	18 39 17.34	2.2288	27 53 30.5	1.108
3	18 41 31.04	2.2278	27 52 20.0	1.243
4	18 43 44.67	2.2267	27 51 1.4	1.377
5	18 45 58.24	2.2255	27 49 34.8	1.511
6	18 48 11.73	2.2242	27 48 0.1	1.645
7	18 50 25.14	2.2228	27 46 17.4	1.778
8	18 52 38.47	2.2214	27 44 26.7	1.912
9	18 54 51.71	2.2199	27 42 28.0	2.045
10	18 57 4.86	2.2183	27 40 21.3	2.178
11	18 59 17.91	2.2167	27 38 6.6	2.311
12	19 1 30.86	2.2149	27 35 44.0	2.443
13	19 3 43.70	2.2131	27 33 13.5	2.575
14	19 5 56.43	2.2113	27 30 35.0	2.707
15	19 8 9.05	2.2093	27 27 48.7	2.838
16	19 10 21.55	2.2073	27 24 54.5	2.968
17	19 12 33.92	2.2051	27 21 52.5	3.098
18	19 14 46.16	2.2030	27 18 42.7	3.229
19	19 16 58.27	2.2008	27 15 25.0	3.359
20	19 19 10.25	2.1984	27 11 59.6	3.488
21	19 21 22.09	2.1961	27 8 26.5	3.616
22	19 23 33.78	2.1937	27 4 45.7	3.744
23	19 25 45.33	2.1912	S.27 0 57.2	3.873
	FRIDAY 22.			
0	19 27 56.72	2.1886	S.26 57 1.0	4.000
1	19 30 7.96	2.1859	26 52 57.2	4.127
2	19 32 19.04	2.1833	26 48 45.8	4.253
3	19 34 29.95	2.1805	26 44 26.9	4.378
4	19 36 40.69	2.1777	26 40 0.4	4.503
5	19 38 51.27	2.1749	26 35 26.4	4.628
6	19 41 1.68	2.1720	26 30 45.0	4.753
7	19 43 11.91	2.1690	26 25 56.2	4.876
8	19 45 21.96	2.1660	26 20 59.9	4.999
9	19 47 31.83	2.1629	26 15 56.3	5.122
10	19 49 41.51	2.1598	26 10 45.3	5.243
11	19 51 51.01	2.1567	26 5 27.1	5.364
12	19 54 0.31	2.1534	26 0 1.6	5.485
13	19 56 9.42	2.1503	25 54 28.9	5.605
14	19 58 18.34	2.1470	25 48 49.0	5.725
15	20 0 27.06	2.1437	25 43 1.9	5.844
16	20 2 35.58	2.1403	25 37 7.7	5.962
17	20 4 43.90	2.1369	25 31 6.5	6.078
18	20 6 52.01	2.1334	25 24 58.3	6.196
19	20 8 59.91	2.1300	25 18 43.0	6.313
20	20 11 7.61	2.1266	25 12 20.8	6.428
21	20 13 15.10	2.1230	25 5 51.7	6.542
22	20 15 22.37	2.1194	24 59 15.8	6.656
23	20 17 29.43	2.1158	24 52 33.0	6.770
24	20 19 36.27	2.1123	S.24 45 43.4	6.883

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	SATURDAY 23.			
	h m s	s	° ′ ″	″
0	20 19 36.27	2.1123	S.24 45 43.4	6.883
1	20 21 42.90	2.1086	24 38 47.1	6.994
2	20 23 49.30	2.1049	24 31 44.1	7.106
3	20 25 55.49	2.1013	24 24 34.4	7.217
4	20 28 1.45	2.0976	24 17 18.1	7.326
5	20 30 7.20	2.0939	24 9 55.3	7.435
6	20 32 12.72	2.0901	24 2 25.9	7.544
7	20 34 18.01	2.0864	23 54 50.0	7.652
8	20 36 23.09	2.0827	23 47 7.7	7.758
9	20 38 27.94	2.0789	23 39 19.0	7.865
10	20 40 32.56	2.0752	23 31 23.9	7.971
11	20 42 36.96	2.0714	23 23 22.5	8.075
12	20 44 41.13	2.0676	23 15 14.9	8.178
13	20 46 45.07	2.0638	23 7 1.1	8.282
14	20 48 48.79	2.0601	22 58 41.1	8.385
15	20 50 52.28	2.0563	22 50 14.9	8.487
16	20 52 55.54	2.0524	22 41 42.7	8.587
17	20 54 58.57	2.0487	22 33 4.5	8.688
18	20 57 1.38	2.0449	22 24 20.2	8.788
19	20 59 3.96	2.0411	22 15 30.0	8.886
20	21 1 6.31	2.0373	22 6 33.9	8.983
21	21 3 8.43	2.0335	21 57 32.0	9.081
22	21 5 10.33	2.0298	21 48 24.2	9.178
23	21 7 12.01	2.0261	S.21 39 10.7	9.273
	SUNDAY 24.			
0	21 9 13.46	2.0223	S.21 29 51.5	9.368
1	21 11 14.69	2.0186	21 20 26.6	9.462
2	21 13 15.69	2.0148	21 10 56.1	9.554
3	21 15 16.47	2.0112	21 1 20.0	9.647
4	21 17 17.03	2.0075	20 51 38.4	9.740
5	21 19 17.37	2.0039	20 41 51.3	9.830
6	21 21 17.50	2.0003	20 31 58.8	9.920
7	21 23 17.40	1.9966	20 22 0.9	10.009
8	21 25 17.09	1.9930	20 11 57.7	10.098
9	21 27 16.56	1.9894	20 1 49.1	10.187
10	21 29 15.82	1.9859	19 51 35.3	10.273
11	21 31 14.87	1.9824	19 41 16.3	10.359
12	21 33 13.71	1.9789	19 30 52.2	10.445
13	21 35 12.34	1.9754	19 20 22.9	10.530
14	21 37 10.76	1.9720	19 9 48.6	10.613
15	21 39 8.98	1.9687	18 59 9.3	10.697
16	21 41 7.00	1.9653	18 48 25.0	10.780
17	21 43 4.82	1.9619	18 37 35.7	10.862
18	21 45 2.43	1.9586	18 26 41.6	10.943
19	21 46 59.85	1.9554	18 15 42.6	11.023
20	21 48 57.08	1.9522	18 4 38.8	11.103
21	21 50 54.11	1.9489	17 53 30.3	11.181
22	21 52 50.95	1.9458	17 42 17.1	11.258
23	21 54 47.61	1.9428	17 30 59.3	11.336
24	21 56 44.08	1.9397	S.17 19 36.8	11.413

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
MONDAY 25.	h m s	s	° ′ ″	″
0	21 56 44.08	1.9397	S. 17 19 36.8	11.413
1	21 58 40.37	1.9367	17 8 9.8	11.488
2	22 0 36.48	1.9337	16 56 38.3	11.563
3	22 2 32.41	1.9308	16 45 2.2	11.638
4	22 4 28.17	1.9278	16 33 21.8	11.710
5	22 6 23.75	1.9250	16 21 37.0	11.783
6	22 8 19.17	1.9223	16 9 47.8	11.855
7	22 10 14.42	1.9195	15 57 54.4	11.926
8	22 12 9.51	1.9168	15 45 56.7	11.997
9	22 14 4.43	1.9141	15 33 54.8	12.067
10	22 15 59.20	1.9115	15 21 48.7	12.136
11	22 17 53.81	1.9089	15 9 38.5	12.203
12	22 19 48.27	1.9065	14 57 24.3	12.270
13	22 21 42.59	1.9041	14 45 6.1	12.337
14	22 23 36.76	1.9016	14 32 43.9	12.403
15	22 25 30.78	1.8993	14 20 17.7	12.468
16	22 27 24.67	1.8971	14 7 47.6	12.533
17	22 29 18.43	1.8948	13 55 13.7	12.597
18	22 31 12.05	1.8926	13 42 36.0	12.660
19	22 33 5.54	1.8905	13 29 54.5	12.723
20	22 34 58.91	1.8885	13 17 9.3	12.784
21	22 36 52.16	1.8866	13 4 20.4	12.845
22	22 38 45.29	1.8846	12 51 27.9	12.905
23	22 40 38.31	1.8827	S. 12 38 31.8	12.965
TUESDAY 26.				
0	22 42 31.22	1.8809	S. 12 25 32.1	13.023
1	22 44 24.02	1.8792	12 12 28.9	13.082
2	22 46 16.72	1.8775	11 59 22.3	13.139
3	22 48 9.32	1.8759	11 46 12.3	13.195
4	22 50 1.83	1.8744	11 32 58.9	13.251
5	22 51 54.25	1.8729	11 19 42.2	13.306
6	22 53 46.58	1.8714	11 6 22.2	13.361
7	22 55 38.82	1.8701	10 52 58.9	13.414
8	22 57 30.99	1.8688	10 39 32.4	13.468
9	22 59 23.08	1.8676	10 26 2.8	13.520
10	23 1 15.10	1.8665	10 12 30.1	13.571
11	23 3 7.06	1.8654	9 58 54.3	13.622
12	23 4 58.95	1.8644	9 45 15.5	13.672
13	23 6 50.79	1.8635	9 31 33.7	13.721
14	23 8 42.57	1.8626	9 17 49.0	13.769
15	23 10 34.30	1.8618	9 4 1.4	13.818
16	23 12 25.98	1.8610	8 50 10.9	13.865
17	23 14 17.62	1.8604	8 36 17.6	13.911
18	23 16 9.23	1.8598	8 22 21.6	13.957
19	23 18 0.80	1.8593	8 8 22.8	14.003
20	23 19 52.35	1.8589	7 54 21.3	14.046
21	23 21 43.87	1.8586	7 40 17.2	14.089
22	23 23 35.37	1.8583	7 26 10.5	14.133
23	23 25 26.86	1.8580	7 12 1.3	14.175
24	23 27 18.34	1.8579	S. 6 57 49.6	14.216

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
WEDNESDAY 27.	h m s	s	° ′ ″	″
0	23 27 18.34	1.8579	S. 6 57 49.6	14.216
1	23 29 9.81	1.8578	6 43 35.4	14.257
2	23 31 1.28	1.8579	6 29 18.8	14.297
3	23 32 52.76	1.8580	6 14 59.8	14.336
4	23 34 44.24	1.8582	6 0 38.5	14.374
5	23 36 35.74	1.8584	5 46 14.9	14.412
6	23 38 27.25	1.8588	5 31 49.1	14.449
7	23 40 18.79	1.8593	5 17 21.1	14.485
8	23 42 10.36	1.8597	5 2 50.9	14.521
9	23 44 1.96	1.8603	4 48 18.6	14.556
10	23 45 53.59	1.8610	4 33 44.2	14.589
11	23 47 45.27	1.8617	4 19 7.9	14.622
12	23 49 36.99	1.8625	4 4 29.6	14.654
13	23 51 28.77	1.8635	3 49 49.4	14.685
14	23 53 20.61	1.8645	3 35 7.4	14.716
15	23 55 12.51	1.8655	3 20 23.5	14.747
16	23 57 4.47	1.8667	3 5 37.8	14.776
17	23 58 56.51	1.8680	2 50 50.4	14.804
18	0 0 48.63	1.8693	2 36 1.3	14.832
19	0 2 40.83	1.8707	2 21 10.6	14.858
20	0 4 33.11	1.8723	2 6 18.3	14.884
21	0 6 25.49	1.8738	1 51 24.5	14.909
22	0 8 17.96	1.8754	1 36 29.2	14.933
23	0 10 10.54	1.8772	S. 1 21 32.5	14.957
THURSDAY 28.				
0	0 12 3.23	1.8791	S. 1 6 34.4	14.979
1	0 13 56.03	1.8810	0 51 35.0	15.002
2	0 15 48.95	1.8831	0 36 34.3	15.023
3	0 17 42.00	1.8853	0 21 32.3	15.043
4	0 19 35.18	1.8874	S. 0 6 29.1	15.062
5	0 21 28.49	1.8897	N. 0 8 35.1	15.079
6	0 23 21.94	1.8921	0 23 40.4	15.097
7	0 25 15.54	1.8946	0 38 46.8	15.114
8	0 27 9.29	1.8972	0 53 54.1	15.129
9	0 29 3.20	1.8999	1 9 2.3	15.144
10	0 30 57.28	1.9027	1 24 11.4	15.158
11	0 32 51.52	1.9055	1 39 21.2	15.170
12	0 34 45.94	1.9085	1 54 31.8	15.182
13	0 36 40.54	1.9115	2 9 43.1	15.193
14	0 38 35.32	1.9146	2 24 55.0	15.203
15	0 40 30.29	1.9178	2 40 7.5	15.212
16	0 42 25.46	1.9212	2 55 20.5	15.220
17	0 44 20.83	1.9246	3 10 34.0	15.227
18	0 46 16.41	1.9281	3 25 47.8	15.233
19	0 48 12.20	1.9317	3 41 1.9	15.238
20	0 50 8.21	1.9354	3 56 16.3	15.243
21	0 52 4.45	1.9393	4 11 31.0	15.246
22	0 54 0.92	1.9431	4 26 45.8	15.247
23	0 55 57.62	1.9471	4 42 0.6	15.248
24	0 57 54.57	1.9513	N. 4 57 15.5	15.248

GREENWICH MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Diff. for 1 Minute.	Declination.	Diff. for 1 Minute.
	FRIDAY 29.			
	h m s	s	° ′ ″	″
0	0 57 54.57	1.9513	N. 4 57 15.5	15.248
1	0 59 51.77	1.9554	5 12 30.3	15.246
2	1 1 49.22	1.9597	5 27 45.0	15.243
3	1 3 46.93	1.9641	5 42 59.5	15.240
4	1 5 44.91	1.9686	5 58 13.8	15.235
5	1 7 43.16	1.9732	6 13 27.7	15.228
6	1 9 41.69	1.9778	6 28 41.2	15.222
7	1 11 40.50	1.9827	6 43 54.3	15.214
8	1 13 39.61	1.9876	6 59 6.9	15.204
9	1 15 39.01	1.9925	7 14 18.8	15.193
10	1 17 38.71	1.9976	7 29 30.1	15.182
11	1 19 38.72	2.0028	7 44 40.6	15.168
12	1 21 39.04	2.0080	7 59 50.3	15.154
13	1 23 39.68	2.0134	8 14 59.1	15.138
14	1 25 40.65	2.0189	8 30 6.9	15.122
15	1 27 41.95	2.0244	8 45 13.7	15.103
16	1 29 43.58	2.0301	9 0 19.3	15.083
17	1 31 45.56	2.0359	9 15 23.7	15.062
18	1 33 47.89	2.0418	9 30 26.7	15.039
19	1 35 50.58	2.0478	9 45 28.4	15.017
20	1 37 53.62	2.0538	10 0 28.7	14.992
21	1 39 57.03	2.0600	10 15 27.4	14.964
22	1 42 0.82	2.0663	10 30 24.5	14.937
23	1 44 4.98	2.0726	N.10 45 19.8	14.908
	SATURDAY 30.			
0	1 46 9.53	2.0791	N.11 0 13.3	14.876
1	1 48 14.47	2.0857	11 15 4.9	14.844
2	1 50 19.80	2.0923	11 29 54.5	14.810
3	1 52 25.54	2.0990	11 44 42.1	14.774
4	1 54 31.69	2.1059	11 59 27.5	14.738
5	1 56 38.25	2.1128	12 14 10.6	14.699
6	1 58 45.23	2.1199	12 28 51.4	14.659
7	2 0 52.64	2.1270	12 43 29.7	14.617
8	2 3 0.48	2.1343	12 58 5.4	14.573
9	2 5 8.75	2.1416	13 12 38.5	14.529
10	2 7 17.46	2.1489	13 27 8.9	14.482
11	2 9 26.62	2.1565	13 41 36.4	14.433
12	2 11 36.24	2.1641	13 56 0.9	14.383
13	2 13 46.31	2.1718	14 10 22.4	14.332
14	2 15 56.85	2.1796	14 24 40.7	14.278
15	2 18 7.86	2.1874	14 38 55.8	14.223
16	2 20 19.34	2.1953	14 53 7.5	14.166
17	2 22 31.30	2.2034	15 7 15.7	14.107
18	2 24 43.75	2.2116	15 21 20.3	14.047
19	2 26 56.69	2.2198	15 35 21.3	13.984
20	2 29 10.12	2.2280	15 49 18.4	13.918
21	2 31 24.05	2.2364	16 3 11.6	13.852
22	2 33 38.49	2.2448	16 17 0.7	13.785
23	2 35 53.43	2.2533	16 30 45.7	13.714
24	2 38 8.89	2.2619	N.16 44 26.4	13.642
	SUNDAY 31.			
	h m s	s	° ′ ″	″
0	2 38 8.89	2.2619	N.16 44 26.4	13.642
1	2 40 24.86	2.2706	16 58 2.7	13.568
2	2 42 41.36	2.2794	17 11 34.6	13.492
3	2 44 58.39	2.2882	17 25 1.8	13.413
4	2 47 15.94	2.2970	17 38 24.2	13.333
5	2 49 34.03	2.3060	17 51 41.8	13.252
6	2 51 52.66	2.3150	18 4 54.4	13.168
7	2 54 11.83	2.3241	18 18 1.9	13.081
8	2 56 31.55	2.3332	18 31 4.1	12.992
9	2 58 51.81	2.3423	18 44 0.9	12.901
10	3 1 12.63	2.3517	18 56 52.3	12.809
11	3 3 34.01	2.3609	19 9 38.0	12.714
12	3 5 55.94	2.3702	19 22 18.0	12.617
13	3 8 18.43	2.3796	19 34 52.1	12.518
14	3 10 41.49	2.3891	19 47 20.2	12.417
15	3 13 5.12	2.3985	19 59 42.1	12.313
16	3 15 29.31	2.4080	20 11 57.7	12.208
17	3 17 54.08	2.4176	20 24 6.9	12.099
18	3 20 19.42	2.4271	20 36 9.6	11.988
19	3 22 45.33	2.4367	20 48 5.6	11.876
20	3 25 11.82	2.4463	20 59 54.7	11.761
21	3 27 38.89	2.4559	21 11 36.9	11.644
22	3 30 6.53	2.4656	21 23 12.0	11.524
23	3 32 34.76	2.4753	N.21 34 39.8	11.403
	MONDAY, JANUARY 1, 1912.			
0	3 35 3.56	2.4849	N.21 46 0.3	11.279

PHASES OF THE MOON.

		d	h	m
○	Full Moon . . . . . Dec.	5	14	51.9
☾	Last Quarter	12	5	45.6
●	New Moon	20	3	40.3
☽	First Quarter	28	6	47.5

		d	h
☾	Perigee . . . . . Dec.	6	13.0
☾	Apogee	21	14.1

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	118 35 47	2901	120 8 4	2881	121 40 47	2861	123 13 56	2841
	α Aquilæ	W.	70 33 36	3511	71 53 48	3474	73 14 41	3438	74 36 15	3404
	Fomalhaut	W.	38 21 27	3056	39 50 30	3002	41 20 40	2953	42 51 52	2906
	Saturn	E.	38 14 36	2552	36 34 35	2536	34 54 12	2580	33 13 26	2504
	Aldebaran	E.	61 41 30	2615	60 2 55	2598	58 23 57	2582	56 44 37	2565
	Pollux	E.	105 19 52	2551	103 39 50	2532	101 59 21	2513	100 18 25	2494
2	α Aquilæ	W.	81 33 16	3255	82 58 21	3229	84 23 56	3205	85 49 59	3183
	Fomalhaut	W.	50 41 37	2711	52 18 2	2678	53 55 11	2646	55 33 4	2615
	α Pegasi	W.	34 12 37	3694	35 29 30	3571	36 48 36	3459	38 9 46	3357
	Aldebaran	E.	48 22 23	2489	46 40 54	2475	44 59 5	2462	43 16 58	2451
	Pollux	E.	91 47 3	2398	90 3 25	2378	88 19 19	2359	86 34 46	2341
3	α Aquilæ	W.	93 6 23	3093	94 34 41	3080	96 3 15	3069	97 32 2	3060
	Fomalhaut	W.	63 52 17	2482	65 33 56	2458	67 16 8	2435	68 58 53	2414
	α Pegasi	W.	45 21 49	2972	46 52 37	2914	48 24 38	2860	49 57 48	2810
	Pollux	E.	77 45 22	2251	75 58 11	2234	74 10 34	2217	72 22 32	2201
	Regulus	E.	114 18 40	2263	112 31 46	2245	110 44 25	2228	108 56 39	2211
4	α Aquilæ	W.	104 57 58	3046	106 27 14	3030	107 56 25	3056	109 25 28	3067
	Fomalhaut	W.	77 39 50	2320	79 25 20	2305	81 11 12	2291	82 57 26	2877
	α Pegasi	W.	57 58 27	2611	59 37 7	2580	61 16 29	2551	62 56 32	2523
	Pollux	E.	63 16 31	2127	61 26 12	2113	59 35 33	2100	57 44 34	2088
	Regulus	E.	99 51 51	2136	98 1 46	2122	96 11 21	2109	94 20 36	2097
5	Fomalhaut	W.	91 53 10	2223	93 41 3	2216	95 29 7	2209	97 17 21	2204
	α Pegasi	W.	71 25 18	2418	73 8 27	2402	74 51 59	2388	76 35 51	2375
	α Arietis	W.	27 51 6	2297	29 37 10	2262	31 24 5	2231	33 11 46	2204
	Saturn	W.	19 28 57	2094	21 20 5	2075	23 11 43	2058	25 3 47	2044
	Pollux	E.	48 25 21	2037	46 32 45	2029	44 39 57	2022	42 46 57	2016
	Regulus	E.	85 2 28	2045	83 10 5	2037	81 17 29	2030	79 24 42	2023
6	Fomalhaut	W.	106 19 46	2197	108 8 18	2199	109 56 47	2203	111 45 10	2209
	α Pegasi	W.	85 19 0	2336	87 4 8	2333	88 49 20	2331	90 34 36	2330
	α Arietis	W.	42 18 42	2116	44 9 17	2105	46 0 8	2096	47 51 13	2090
	Saturn	W.	34 28 42	2000	36 22 17	1995	38 15 59	1991	40 9 47	1989
	Pollux	E.	33 19 52	1995	31 26 10	1994	29 32 26	1993	27 38 41	1994
	Regulus	E.	69 58 33	2002	68 5 2	2000	66 11 28	2000	64 17 53	1999
	Venus	E.	127 53 5	2310	126 7 20	2307	124 21 31	2306	122 35 40	2306
7	α Pegasi	W.	99 20 19	2350	101 5 6	2359	102 49 40	2369	104 33 59	2380
	α Arietis	W.	57 8 35	2075	59 0 12	2076	60 51 48	2078	62 43 21	2080
	Saturn	W.	49 39 12	1992	51 32 59	1995	53 26 42	1998	55 20 19	2003
	Aldebaran	W.	27 11 46	2227	28 59 34	2206	30 47 53	2189	32 36 37	2176
	Regulus	E.	54 50 17	2010	52 56 59	2015	51 3 49	2021	49 10 47	2027
	Spica	E.	108 51 7	1999	106 57 31	2003	105 4 2	2008	103 10 40	2013
	Venus	E.	113 46 42	2316	112 1 6	2380	110 15 36	2326	108 30 14	2332
8	α Arietis	W.	71 59 36	2109	73 50 22	2116	75 40 56	2125	77 31 17	2135
	Saturn	W.	64 46 6	2038	66 38 41	2047	68 31 2	2057	70 23 8	2067
	Aldebaran	W.	41 43 37	2155	43 33 12	2157	45 22 44	2161	47 12 11	2165
	Regulus	E.	39 48 36	2073	37 56 55	2084	36 5 31	2097	34 14 27	2111

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Sun	W.	124 47 30	2821	126 21 31	2801	127 55 58	2781	129 30 51	2760
	α Aquilæ	W.	75 58 27	3372	77 21 16	3340	78 44 42	3309	80 8 43	3282
	Fomalhaut	W.	44 24 3	2863	45 57 9	2821	47 31 9	2783	49 5 59	2747
	Saturn	E.	31 32 17	2488	29 50 47	2473	28 8 55	2458	26 26 43	2443
	Aldebaran	E.	55 4 54	2549	53 24 48	2533	51 44 21	2518	50 3 32	2503
	Pollux	E.	98 37 3	2474	96 55 13	2455	95 12 57	2436	93 30 13	2417
2	α Aquilæ	W.	87 16 29	3162	88 43 24	3142	90 10 43	3124	91 38 23	3108
	Fomalhaut	W.	57 11 38	2587	58 50 51	2559	60 30 43	2532	62 11 12	2506
	α Pegasi	W.	39 32 52	3265	40 57 45	3181	42 24 17	3105	43 52 20	3035
	Aldebaran	E.	41 34 36	2441	39 51 59	2431	38 9 8	2423	36 26 6	2417
	Pollux	E.	84 49 47	2322	83 4 20	2304	81 18 27	2286	79 32 8	2268
3	α Aquilæ	W.	99 1 1	3052	100 30 9	3047	101 59 23	3045	103 28 40	3044
	Fomalhaut	W.	70 42 8	2393	72 25 53	2374	74 10 5	2355	75 54 44	2337
	α Pegasi	W.	51 32 3	2764	53 7 18	2722	54 43 29	2682	56 20 33	2645
	Pollux	E.	70 34 6	2185	68 45 16	2170	66 56 3	2155	65 6 28	2141
	Regulus	E.	107 8 28	2195	105 19 53	2180	103 30 55	2165	101 41 34	2150
4	α Aquilæ	W.	110 54 18	3080	112 22 52	3096	113 51 6	3117	115 18 55	3140
	Fomalhaut	W.	84 44 0	2264	86 30 53	2252	88 18 3	2241	90 5 29	2231
	α Pegasi	W.	64 37 13	2499	66 18 28	2476	68 0 16	2455	69 42 33	2435
	Pollux	E.	55 53 17	2077	54 1 42	2066	52 9 50	2056	50 17 43	2046
	Regulus	E.	92 29 32	2086	90 38 10	2075	88 46 32	2064	86 54 38	2054
5	Fomalhaut	W.	99 5 42	2200	100 54 9	2198	102 42 40	2196	104 31 13	2196
	α Pegasi	W.	78 20 2	2364	80 4 28	2355	81 49 8	2347	83 34 0	2341
	α Arietis	W.	35 0 7	2180	36 49 4	2160	38 38 32	2143	40 28 26	2128
	Saturn	W.	26 56 13	2031	28 48 59	2021	30 42 1	2012	32 35 16	2005
	Pollux	E.	40 53 47	2010	39 0 28	2005	37 7 2	2001	35 13 30	1998
	Regulus	E.	77 31 44	2017	75 38 37	2012	73 45 22	2008	71 52 0	2005
6	Fomalhaut	W.	113 33 24	2216	115 21 28	2224	117 9 20	2234	118 56 57	2245
	α Pegasi	W.	92 19 52	2331	94 5 6	2333	95 50 17	2337	97 35 22	2343
	α Arietis	W.	49 42 28	2084	51 33 52	2080	53 25 22	2077	55 16 57	2075
	Saturn	W.	42 3 39	1987	43 57 33	1987	45 51 27	1987	47 45 21	1989
	Pollux	E.	25 44 57	1996	23 51 16	1998	21 57 38	2001	20 4 5	2006
	Regulus	E.	62 24 17	2000	60 30 42	2001	58 37 10	2003	56 43 41	2006
	Venus	E.	120 49 49	2307	119 3 59	2308	117 18 10	2309	115 32 24	2312
7	α Pegasi	W.	106 18 2	2394	108 1 46	2409	109 45 8	2425	111 28 7	2443
	α Arietis	W.	64 34 51	2084	66 26 15	2089	68 17 31	2095	70 8 38	2102
	Saturn	W.	57 13 48	2009	59 7 8	2015	61 0 19	2022	62 53 19	2030
	Aldebaran	W.	34 25 41	2166	36 15 0	2160	38 4 28	2157	39 54 1	2155
	Regulus	E.	47 17 55	2035	45 25 15	2043	43 32 47	2052	41 40 34	2062
	Spica	E.	101 17 26	2019	99 24 21	2026	97 31 27	2033	95 38 44	2041
	Venus	E.	106 45 0	2338	104 59 56	2346	103 15 4	2354	101 30 23	2363
8	α Arietis	W.	79 21 23	2145	81 11 14	2156	83 0 48	2168	84 50 4	2180
	Saturn	W.	72 14 59	2077	74 6 33	2089	75 57 49	2101	77 48 47	2113
	Aldebaran	W.	49 1 32	2171	50 50 43	2178	52 39 44	2186	54 28 33	2194
	Regulus	E.	32 23 44	2126	30 33 24	2141	28 43 28	2158	26 53 58	2177

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
8	Spica	E.	93 46 14	2050	91 53 57	2059	90 1 55	2069	88 10 8	2079
	VENUS	E.	99 45 55	2373	98 1 41	2383	96 17 42	2394	94 33 58	2405
9	α Arietis	W.	86 39 3	2192	88 27 43	2205	90 16 3	2219	92 4 3	2233
	SATURN	W.	79 39 27	2126	81 29 47	2139	83 19 48	2152	85 9 28	2166
	Aldebaran	W.	56 17 9	2204	58 5 30	2216	59 53 34	2227	61 41 22	2239
	Spica	E.	78 55 28	2139	77 5 28	2152	75 15 48	2166	73 26 29	2180
	VENUS	E.	85 59 43	2471	84 17 49	2486	82 36 16	2501	80 55 4	2516
	SUN	E.	132 10 36	2460	130 28 27	2474	128 46 37	2488	127 5 7	2502
10	α Arietis	W.	100 58 37	2309	102 44 23	2325	104 29 46	2342	106 14 45	2359
	SATURN	W.	94 12 26	2240	95 59 54	2256	97 46 59	2271	99 33 41	2287
	Aldebaran	W.	70 35 46	2304	72 21 40	2319	74 7 12	2333	75 52 23	2348
	Pollux	W.	26 25 2	2257	28 12 5	2271	29 58 47	2286	31 45 7	2301
	Spica	E.	64 25 19	2254	62 38 12	2270	60 51 29	2286	59 5 9	2302
	VENUS	E.	72 34 33	2598	70 55 35	2615	69 17 1	2632	67 38 50	2650
	SUN	E.	118 42 50	2580	117 3 29	2596	115 24 29	2613	113 45 52	2630
11	SATURN	W.	108 21 20	2368	110 5 41	2384	111 49 38	2401	113 33 12	2417
	Aldebaran	W.	84 32 46	2426	86 15 43	2442	87 58 18	2458	89 40 30	2474
	Pollux	W.	40 31 9	2380	42 15 12	2396	43 58 53	2412	45 42 11	2427
	Spica	E.	50 19 25	2384	48 35 28	2401	46 51 54	2417	45 8 44	2433
	VENUS	E.	59 33 57	2741	57 58 11	2758	56 22 48	2776	54 47 49	2794
	SUN	E.	105 38 33	2716	104 2 15	2734	102 26 20	2751	100 50 48	2769
12	Aldebaran	W.	98 5 51	2555	99 45 47	2571	101 25 22	2587	103 4 35	2604
	Pollux	W.	54 13 6	2506	55 54 11	2522	57 34 54	2537	59 15 16	2552
	Regulus	W.	18 0 56	2608	19 39 40	2609	21 18 23	2612	22 57 1	2618
	Spica	E.	36 38 48	2518	34 57 59	2535	33 17 34	2551	31 37 32	2568
	VENUS	E.	46 58 49	2885	45 26 11	2903	43 53 56	2921	42 22 4	2939
	SUN	E.	92 58 48	2855	91 25 31	2872	89 52 36	2888	88 20 2	2905
13	Pollux	W.	67 31 55	2625	69 10 16	2639	70 48 17	2653	72 26 0	2667
	Regulus	W.	31 7 46	2663	32 45 16	2673	34 22 32	2684	35 59 33	2695
	VENUS	E.	34 48 19	3027	33 18 40	3044	31 49 22	3062	30 20 26	3080
	SUN	E.	80 42 25	2985	79 11 54	3001	77 41 42	3016	76 11 49	3031
14	Pollux	W.	80 30 6	2731	82 6 5	2743	83 41 47	2755	85 17 14	2767
	Regulus	W.	44 0 56	2751	45 36 28	2762	47 11 45	2773	48 46 48	2783
	VENUS	E.	23 1 16	3173	21 34 35	3194	20 8 19	3216	18 42 28	3239
	SUN	E.	68 46 57	3103	67 18 51	3116	65 51 1	3129	64 23 27	3142
15	Pollux	W.	93 10 45	2821	94 44 46	2831	96 18 34	2841	97 52 9	2850
	Regulus	W.	56 38 40	2835	58 12 23	2844	59 45 54	2853	61 19 13	2862
	SUN	E.	57 9 26	3204	55 43 22	3215	54 17 31	3227	52 51 54	3238
16	Pollux	W.	105 37 6	2894	107 9 32	2902	108 41 48	2910	110 13 53	2918
	Regulus	W.	69 2 58	2905	70 35 11	2912	72 7 14	2920	73 39 7	2927
	SUN	E.	45 47 1	3291	44 22 39	3301	42 58 29	3311	41 34 31	3321
17	Regulus	W.	81 16 17	2962	82 47 18	2968	84 18 11	2974	85 48 56	2980
	SUN	E.	34 37 30	3371	33 14 40	3381	31 52 1	3391	30 29 34	3401

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
8	Spica	E.	86 18 37	2090	84 27 23	2102	82 36 26	2114	80 45 48	2126
	VENUS	E.	92 50 31	2417	91 7 22	2430	89 24 30	2443	87 41 57	2457
9	α Arietis	W.	93 51 42	2247	95 39 0	2262	97 25 55	2278	99 12 27	2293
	SATURN	W.	86 58 47	2180	88 47 45	2194	90 36 21	2209	92 24 35	2225
	Aldebaran	W.	63 28 52	2251	65 16 4	2264	67 2 58	2277	68 49 32	2290
	Spica	E.	71 37 31	2194	69 48 55	2209	68 0 41	2224	66 12 49	2239
	VENUS	E.	79 14 13	2532	77 33 44	2548	75 53 38	2564	74 13 54	2581
	SUN	E.	125 23 57	2517	123 43 8	2533	122 2 40	2548	120 22 34	2564
10	α Arietis	W.	107 59 19	2376	109 43 28	2394	111 27 12	2412	113 10 30	2429
	SATURN	W.	101 20 0	2303	103 5 55	2319	104 51 27	2335	106 36 35	2351
	Aldebaran	W.	77 37 12	2364	79 21 39	2379	81 5 44	2395	82 49 26	2410
	Pollux	W.	33 31 5	2317	35 16 40	2332	37 1 53	2348	38 46 42	2364
	Spica	E.	57 19 13	2319	55 33 41	2335	53 48 32	2351	52 3 47	2367
	VENUS	E.	66 1 3	2668	64 23 40	2686	62 46 42	2704	61 10 8	2722
	SUN	E.	112 7 38	2647	110 29 47	2664	108 52 19	2681	107 15 14	2699
11	SATURN	W.	115 16 22	2433	116 59 9	2450	118 41 33	2466	120 23 34	2482
	Aldebaran	W.	91 22 20	2490	93 3 47	2507	94 44 51	2523	96 25 32	2539
	Pollux	W.	47 25 7	2443	49 7 40	2459	50 49 51	2475	52 31 39	2490
	Spica	E.	43 25 57	2450	41 43 34	2467	40 1 35	2484	38 20 0	2501
	VENUS	E.	53 13 13	2813	51 39 2	2831	50 5 14	2849	48 31 50	2867
	SUN	E.	99 15 39	2786	97 40 53	2803	96 6 29	2820	94 32 27	2838
12	Aldebaran	W.	104 43 26	2619	106 21 55	2635	108 0 3	2650	109 37 50	2666
	Pollux	W.	60 55 16	2567	62 34 56	2582	64 14 15	2596	65 53 15	2611
	Regulus	W.	24 35 32	2624	26 13 54	2632	27 52 5	2642	29 30 3	2653
	Spica	E.	29 57 53	2585	28 18 38	2602	26 39 46	2620	25 1 18	2637
	VENUS	E.	40 50 34	2957	39 19 27	2975	37 48 43	2992	36 18 20	3009
	SUN	E.	86 47 49	2922	85 15 57	2938	83 44 27	2954	82 13 16	2969
13	Pollux	W.	74 3 24	2680	75 40 30	2693	77 17 19	2706	78 53 51	2719
	Regulus	W.	37 36 20	2706	39 12 52	2718	40 49 8	2729	42 25 9	2740
	VENUS	E.	28 51 52	3098	27 23 40	3116	25 55 50	3134	24 28 21	3153
	SUN	E.	74 42 15	3046	73 12 59	3060	71 44 1	3074	70 15 20	3089
14	Pollux	W.	86 52 25	2778	88 27 21	2789	90 2 3	2800	91 36 31	2811
	Regulus	W.	50 21 38	2794	51 56 14	2805	53 30 36	2815	55 4 45	2825
	VENUS	E.	17 17 5	3265	15 52 13	3296	14 27 57	3332	13 4 23	3375
	SUN	E.	62 56 8	3155	61 29 5	3168	60 2 17	3180	58 35 44	3192
15	Pollux	W.	99 25 32	2860	100 58 42	2869	102 31 41	2877	104 4 29	2886
	Regulus	W.	62 52 21	2871	64 25 17	2880	65 58 1	2888	67 30 35	2897
	SUN	E.	51 26 30	3249	50 1 19	3260	48 36 21	3270	47 11 35	3281
16	Pollux	W.	111 45 49	2926	113 17 35	2933	114 49 12	2940	116 20 40	2946
	Regulus	W.	75 10 51	2935	76 42 26	2942	78 13 51	2949	79 45 8	2955
	SUN	E.	40 10 44	3331	38 47 8	3341	37 23 44	3351	36 0 31	3361
17	Regulus	W.	87 19 34	2986	88 50 4	2992	90 20 27	2997	91 50 43	3001
	SUN	E.	29 7 19	3412	27 45 16	3424	26 23 26	3436	25 1 50	3448

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LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Noon.	P. L. of Diff.	III^h	P. L. of Diff.	VI^h	P. L. of Diff.	IX^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
22	Sun	W.	20 37 10	3565	21 56 22	3556	23 15 44	3547	24 35 16	3539
	α Arietis	E.	107 26 3	3141	105 58 43	3139	104 31 21	3138	103 3 57	3137
	Saturn	E.	113 55 26	3073	112 26 44	3073	110 58 1	3072	109 29 17	3072
23	Sun	W.	31 14 58	3507	32 35 14	3502	33 55 36	3497	35 16 4	3492
	α Arietis	E.	95 46 30	3127	94 18 54	3125	92 51 15	3123	91 23 33	3120
	Saturn	E.	102 5 22	3065	100 36 29	3063	99 7 34	3060	97 38 36	3058
	Aldebaran	E.	126 9 48	3147	124 42 35	3142	123 15 16	3137	121 47 51	3132
24	Sun	W.	41 59 52	3464	43 20 56	3458	44 42 7	3452	46 3 25	3445
	α Arietis	E.	84 4 10	3104	82 36 5	3100	81 7 55	3096	79 39 40	3091
	Saturn	E.	90 12 52	3041	88 43 30	3037	87 14 3	3032	85 44 30	3028
	Aldebaran	E.	114 29 17	3106	113 1 15	3101	111 33 7	3095	110 4 52	3089
25	Sun	W.	52 51 51	3409	54 13 57	3401	55 36 12	3392	56 58 37	3383
	α Arietis	E.	72 16 59	3065	70 48 7	3060	69 19 9	3054	67 50 3	3047
	Saturn	E.	78 15 11	2999	76 44 57	2992	75 14 34	2985	73 44 3	2977
	Aldebaran	E.	102 41 39	3056	101 12 35	3048	99 43 22	3041	98 14 0	3033
26	Sun	W.	63 53 25	3333	65 16 58	3322	66 40 43	3311	68 4 42	3299
	α Arietis	E.	60 22 31	3014	58 52 35	3005	57 22 29	2998	55 52 14	2991
	Saturn	E.	66 8 58	2935	64 37 24	2926	63 5 38	2916	61 33 39	2906
	Aldebaran	E.	90 44 29	2988	89 14 1	2978	87 43 21	2968	86 12 28	2957
27	Sun	W.	75 8 13	3234	76 33 42	3220	77 59 28	3205	79 25 31	3190
	α Arietis	E.	48 18 33	2952	46 47 20	2945	45 15 58	2938	43 44 26	2931
	Saturn	E.	53 50 23	2850	52 17 0	2838	50 43 21	2825	49 9 25	2812
	Aldebaran	E.	78 34 35	2900	77 2 17	2888	75 29 43	2875	73 56 53	2862
	Pollux	E.	122 23 25	2850	120 50 2	2837	119 16 23	2824	117 42 26	2810
28	Sun	W.	86 40 24	3110	88 8 22	3093	89 36 40	3076	91 5 19	3058
	α Arietis	E.	36 4 53	2907	34 32 43	2906	33 0 32	2906	31 28 21	2909
	Saturn	E.	41 15 31	2744	39 39 50	2730	38 3 51	2716	36 27 33	2702
	Aldebaran	E.	66 8 28	2795	64 33 54	2781	62 59 2	2767	61 23 51	2753
	Pollux	E.	109 48 1	2736	108 12 9	2720	106 35 56	2704	104 59 21	2688
29	Sun	W.	98 34 9	2965	100 5 5	2946	101 36 25	2927	103 8 9	2908
	Fomalhaut	W.	46 6 14	2977	47 36 56	2939	49 8 25	2904	50 40 39	2869
	Saturn	E.	28 21 19	2633	26 43 9	2621	25 4 43	2610	23 26 1	2599
	Aldebaran	E.	53 23 11	2681	51 46 6	2667	50 8 42	2653	48 30 59	2639
	Pollux	E.	96 50 52	2602	95 12 0	2584	93 32 43	2566	91 53 1	2548
30	Sun	W.	110 53 8	2808	112 27 25	2788	114 2 8	2769	115 37 17	2749
	Fomalhaut	W.	58 32 17	2717	60 8 35	2689	61 45 29	2662	63 23 0	2636
	α Pegasi	W.	40 31 37	3330	41 55 14	3255	43 20 18	3185	44 46 45	3120
	Aldebaran	E.	40 18 1	2581	38 38 40	2572	36 59 6	2564	35 19 21	2558
	Pollux	E.	83 28 8	2455	81 45 51	2436	80 3 7	2417	78 19 56	2398
31	Sun	W.	123 39 36	2652	125 17 21	2633	126 55 32	2614	128 34 8	2594
	Fomalhaut	W.	71 39 11	2515	73 20 3	2492	75 1 27	2470	76 43 22	2450
	α Pegasi	W.	52 17 3	2858	53 50 16	2815	55 24 25	2774	56 59 27	2736
	Pollux	E.	69 37 16	2304	67 51 22	2286	66 5 2	2268	64 18 15	2249

GREENWICH MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Name and Direction of Object.		Midnight.	P. L. of Diff.	XV^h	P. L. of Diff.	XVIII^h	P. L. of Diff.	XXI^h	P. L. of Diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
22	Sun	W.	25 54 58	3532	27 14 48	3525	28 34 44	3519	29 54 48	3513
	α Arietis	E.	101 36 32	3135	100 9 4	3133	98 41 35	3131	97 14 4	3129
	Saturn	E.	108 0 33	3071	106 31 48	3070	105 3 1	3069	103 34 13	3067
23	Sun	W.	36 36 38	3487	37 57 17	3481	39 18 3	3476	40 38 54	3470
	α Arietis	E.	89 55 48	3117	88 27 59	3114	87 0 7	3111	85 32 11	3107
	Saturn	E.	96 9 35	3055	94 40 30	3052	93 11 22	3048	91 42 9	3045
	Aldebaran	E.	120 20 20	3127	118 52 44	3122	117 25 1	3117	115 57 12	3112
24	Sun	W.	47 24 51	3438	48 46 24	3431	50 8 5	3424	51 29 54	3417
	α Arietis	E.	78 11 20	3087	76 42 54	3082	75 14 22	3077	73 45 44	3071
	Saturn	E.	84 14 52	3023	82 45 8	3017	81 15 16	3011	79 45 17	3005
	Aldebaran	E.	108 36 29	3083	107 7 59	3077	105 39 21	3070	104 10 34	3063
25	Sun	W.	58 21 13	3374	59 43 59	3364	61 6 56	3354	62 30 5	3344
	α Arietis	E.	66 20 49	3041	64 51 27	3034	63 21 57	3027	61 52 18	3021
	Saturn	E.	72 13 22	2970	70 42 32	2962	69 11 31	2954	67 40 20	2945
	Aldebaran	E.	96 44 27	3024	95 14 44	3015	93 44 50	3006	92 14 45	2997
26	Sun	W.	69 28 55	3287	70 53 22	3274	72 18 4	3261	73 43 1	3248
	α Arietis	E.	54 21 50	2983	52 51 15	2975	51 20 31	2967	49 49 37	2959
	Saturn	E.	60 1 28	2895	58 29 3	2884	56 56 24	2873	55 23 31	2862
	Aldebaran	E.	84 41 21	2946	83 10 1	2935	81 38 27	2924	80 6 38	2912
27	Sun	W.	80 51 52	3175	82 18 31	3159	83 45 29	3143	85 12 47	3127
	α Arietis	E.	42 12 46	2924	40 40 58	2918	39 9 2	2913	37 37 0	2909
	Saturn	E.	47 35 13	2799	46 0 43	2786	44 25 57	2772	42 50 53	2758
	Aldebaran	E.	72 23 46	2849	70 50 23	2836	69 16 42	2823	67 42 44	2809
	Pollux	E.	116 8 11	2796	114 33 37	2782	112 58 45	2766	111 23 33	2751
28	Sun	W.	92 34 20	3040	94 3 43	3022	95 33 28	3003	97 3 37	2984
	α Arietis	E.	29 56 14	2916	28 24 16	2927	26 52 32	2943	25 21 8	2965
	Saturn	E.	34 50 56	2688	33 14 0	2674	31 36 45	2660	29 59 11	2646
	Aldebaran	E.	59 48 21	2738	58 12 32	2724	56 36 24	2710	54 59 57	2695
	Pollux	E.	103 22 25	2671	101 45 6	2654	100 7 25	2637	98 29 20	2620
29	Sun	W.	104 40 18	2888	106 12 52	2868	107 45 52	2848	109 19 17	2828
	Fomalhaut	W.	52 13 37	2837	53 47 17	2806	55 21 37	2775	56 56 38	2746
	Saturn	E.	21 47 5	2590	20 7 57	2585	18 28 42	2584	16 49 25	2585
	Aldebaran	E.	46 52 57	2626	45 14 37	2614	43 36 1	2602	41 57 9	2591
	Pollux	E.	90 12 54	2529	88 32 22	2510	86 51 23	2498	85 9 59	2473
30	Sun	W.	117 12 52	2729	118 48 54	2709	120 25 22	2689	122 2 16	2670
	Fomalhaut	W.	65 1 6	2610	66 39 47	2585	68 19 2	2561	69 58 50	2538
	α Pegasi	W.	46 14 31	3060	47 43 30	3005	49 13 36	2953	50 44 48	2903
	Aldebaran	E.	33 39 28	2554	31 59 30	2553	30 19 31	2556	28 39 36	2564
	Pollux	E.	76 36 19	2379	74 52 14	2360	73 7 42	2341	71 22 42	2323
31	Sun	W.	130 13 11	2576	131 52 39	2557	133 32 33	2538	135 12 53	2521
	Fomalhaut	W.	78 25 46	2430	80 8 39	2410	81 52 0	2391	83 35 48	2373
	α Pegasi	W.	58 35 19	2700	60 12 0	2666	61 49 27	2634	63 27 37	2603
	Pollux	E.	62 31 1	2232	60 43 21	2214	58 55 15	2197	57 6 43	2181

GREENWICH MEAN TIME.

JANUARY.

Day of Month.	Apparent Right Ascension.	Var. of R.A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	19 53 19.81	− 0.895	− 20 36 16.5	+ 43.05	1 13.1
2	19 52 33.89	2.943	20 19 44.8	39.49	1 8.3
3	19 50 58.37	5.020	20 4 45.1	35.38	1 2.8
4	19 48 33.24	7.064	19 51 29.9	30.83	0 56.4
5	19 45 20.18	9.000	19 40 8.0	25.97	0 49.2
6	19 41 22.81	− 10.740	− 19 30 44.2	+ 21.00	0 41.3
7	19 36 46.77	12.205	19 23 19.8	16.05	0 32.8
8	19 31 39.68	13.316	19 17 52.7	11.26	0 23.8
9	19 26 10.79	14.015	19 14 17.5	6.73	0 14.5
10	19 20 30.41	14.272	19 12 27.4	+ 2.51	{ 0 4.9 / 23 55.3
11	19 14 49.27	− 14.083	− 19 12 14.4	− 1.36	23 45.9
12	19 9 17.73	13.479	19 13 30.0	4.89	23 36.8
13	19 4 5.15	12.514	19 16 6.3	8.08	23 28.2
14	18 59 19.36	11.259	19 19 55.4	10.96	23 20.1
15	18 55 6.42	9.791	19 24 49.6	13.51	23 12.5
16	18 51 30.52	− 8.185	− 19 30 41.2	− 15.73	23 5.7
17	18 48 34.14	6.508	19 37 22.3	17.63	22 59.5
18	18 46 18.24	4.819	19 44 44.8	19.18	22 53.9
19	18 44 42.61	3.160	19 52 40.4	20.38	22 49.0
20	18 43 46.10	1.563	20 1 0.4	21.22	22 44.7
21	18 43 26.93	− 0.051	− 20 9 36.3	− 21.71	22 41.0
22	18 43 42.93	+ 1.367	20 18 19.7	21.85	22 37.9
23	18 44 31.73	2.682	20 27 2.4	21.65	22 35.2
24	18 45 50.85	3.893	20 35 36.5	21.14	22 33.1
25	18 47 37.82	5.004	20 43 54.9	20.34	22 31.3
26	18 49 50.29	+ 6.020	− 20 51 50.9	− 19.27	22 29.9
27	18 52 26.03	6.944	20 59 18.0	17.95	22 28.9
28	18 55 22.93	7.784	21 6 10.6	16.41	22 28.2
29	18 58 39.05	8.547	21 12 23.7	14.66	22 27.8
30	19 2 12.63	9.239	21 17 52.6	12.73	22 27.7
31	19 6 2.06	+ 9.869	− 21 22 33.3	− 10.63	22 27.8
32	19 10 5.88	+ 10.440	− 21 26 21.9	− 8.39	22 28.1

Day of the Month.	1st.	6th.	11th.	16th.	21st.	26th.	31st.
	″	″	″	″	″	″	″
Semidiameter.	4.16	4.74	5.00	4.76	4.29	3.84	3.48
Hor. Parallax.	10.97	12.51	13.16	12.53	11.31	10.12	9.17

FEBRUARY.

Day of Month.	Apparent Right Ascension.	Var. of R.A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	19 10 5.88	+ 10.440	− 21 26 21.9	− 8.39	22 28.1
2	19 14 22.76	10.958	21 29 15.1	6.02	22 28.6
3	19 18 51.49	11.428	21 31 10.0	3.53	22 29.3
4	19 23 30.98	11.855	21 32 4.1	− 0.96	22 30.2
5	19 28 20.27	12.245	21 31 55.0	+ 1.72	22 31.2
6	19 33 18.48	+ 12.600	− 21 30 40.7	+ 4.48	22 32.4
7	19 38 24.82	12.923	21 28 19.3	7.31	22 33.7
8	19 43 38.56	13.217	21 24 49.3	10.20	22 35.1
9	19 48 59.06	13.487	21 20 9.4	13.14	22 36.6
10	19 54 25.74	13.733	21 14 18.1	16.14	22 38.2
11	19 59 58.08	+ 13.958	− 21 7 14.4	+ 19.18	22 39.8
12	20 5 35.60	14.163	20 58 57.4	22.25	22 41.6
13	20 11 17.86	14.354	20 49 26.1	25.36	22 43.4
14	20 17 4.47	14.528	20 38 39.8	28.50	22 45.3
15	20 22 55.09	14.688	20 26 38.0	31.65	22 47.3
16	20 28 49.41	+ 14.835	− 20 13 19.9	+ 34.84	22 49.3
17	20 34 47.13	14.970	19 58 45.1	38.05	22 51.4
18	20 40 47.98	15.098	19 42 53.0	41.27	22 53.5
19	20 46 51.75	15.215	19 25 43.4	44.51	22 55.7
20	20 52 58.23	15.322	19 7 15.9	47.77	22 57.9
21	20 59 7.23	+ 15.425	− 18 47 30.4	+ 51.02	23 0.1
22	21 5 18.58	15.521	18 26 26.6	54.29	23 2.4
23	21 11 32.15	15.610	18 4 4.2	57.57	23 4.7
24	21 17 47.81	15.695	17 40 23.3	60.84	23 7.1
25	21 24 5.46	15.777	17 15 23.6	64.12	23 9.5
26	21 30 25.01	+ 15.855	− 16 49 5.0	+ 67.41	23 11.9
27	21 36 46.40	15.929	16 21 27.6	70.69	23 14.3
28	21 43 9.56	16.001	15 52 31.6	73.97	23 16.8
29	21 49 34.46	16.073	15 22 16.8	77.26	23 19.3
30	21 56 1.08	16.145	14 50 43.1	80.53	23 21.8
31	22 2 29.41	+ 16.216	− 14 17 50.9	+ 83.80	23 24.4
32	22 8 59.44	+ 16.287	− 13 43 40.4	+ 87.07	23 27.0

Day of the Month.	5th.	10th.	15th.	20th.	25th.
	″	″	″	″	″
Semidiameter	3.20	2.99	2.82	2.70	2.60
Horizontal Parallax . .	8.43	7.87	7.43	7.10	6.84

NOTE.—The sign + indicates north declinations; the sign − indicates south declinations.

GREENWICH MEAN TIME.

MARCH.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	21 49 34.46	+ 16.073	− 15 22 16.8	+ 77.26	23 19.3
2	21 56 1.08	16.145	14 50 43.1	80.53	23 21.8
3	22 2 29.41	16.216	14 17 50.9	83.80	23 24.4
4	22 8 59.44	16.287	13 43 40.4	87.07	23 27.0
5	22 15 31.19	16.359	13 8 11.7	90.32	23 29.6
6	22 22 4.69	+ 16.433	− 12 31 25.0	+ 93.56	23 32.3
7	22 28 39.99	16.509	11 53 20.5	96.79	23 35.0
8	22 35 17.14	16.587	11 13 58.7	100.00	23 37.7
9	22 41 56.18	16.667	10 33 20.3	103.18	23 40.4
10	22 48 37.17	16.751	9 51 25.7	106.36	23 43.2
11	22 55 20.20	+ 16.837	− 9 8 15.4	+ 109.50	23 46.0
12	23 2 5.35	16.926	8 23 50.5	112.58	23 48.9
13	23 8 52.69	17.019	7 38 12.1	115.62	23 51.8
14	23 15 42.29	17.114	6 51 21.5	118.60	23 54.7
15	23 22 34.20	17.212	6 3 20.0	121.51	23 57.6
16	23 29 28.49	+ 17.312	− 5 14 9.6	+ 124.33	. . .
17	23 36 25.20	17.414	4 23 52.7	127.05	0 0.6
18	23 43 24.35	17.515	3 32 32.1	129.65	0 3.7
19	23 50 25.93	17.615	2 40 10.6	132.12	0 6.8
20	23 57 29.87	17.712	1 46 51.9	134.40	0 9.9
21	0 4 36.08	+ 17.803	− 0 52 40.7	+ 136.47	0 13.1
22	0 11 44.42	17.887	+ 0 2 17.5	138.31	0 16.3
23	0 18 54.68	17.962	0 57 56.7	139.89	0 19.5
24	0 26 6.56	18.024	1 54 9.9	141.15	0 22.8
25	0 33 19.68	18.067	2 50 49.2	142.06	0 26.1
26	0 40 33.56	+ 18.087	+ 3 47 45.4	+ 142.56	0 29.4
27	0 47 47.61	18.080	4 44 48.5	142.62	0 32.7
28	0 55 1.13	18.043	5 41 47.5	142.20	0 36.0
29	1 2 13.31	17.969	6 38 30.2	141.26	0 39.2
30	1 9 23.22	17.852	7 34 43.7	139.77	0 42.4
31	1 16 29.80	+ 17.689	+ 8 30 14.7	+ 137.71	0 45.6
32	1 23 31.92	+ 17.478	+ 9 24 49.3	+ 135.07	0 48.7

Day of the Month.	2d.	7th.	12th.	17th.	22d.	27th.
	″	″	″	″	″	″
Semidiameter . .	2.52	2.48	2.45	2.45	2.50	2.60
Hor. Parallax . .	6.65	6.52	6.45	6.47	6.58	6.85

APRIL.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	1 23 31.92	+ 17.478	+ 9 24 49.3	+ 135.07	0 48.7
2	1 30 28.34	17.214	10 18 13.5	131.85	0 51.7
3	1 37 17.76	16.895	11 10 13.5	128.06	0 54.6
4	1 43 58.86	16.520	12 0 35.9	123.71	0 57.3
5	1 50 30.29	16.089	12 49 8.1	118.85	0 59.9
6	1 56 50.70	+ 15.603	+ 13 35 38.5	+ 113.55	1 2.3
7	2 2 58.78	15.063	14 19 56.5	107.86	1 4.5
8	2 8 53.26	14.470	15 1 53.0	101.80	1 6.5
9	2 14 32.94	13.829	15 41 20.0	95.41	1 8.2
10	2 19 56.67	13.142	16 18 10.8	88.78	1 9.6
11	2 25 3.39	+ 12.411	+ 16 52 19.9	+ 81.95	1 10.8
12	2 29 52.12	11.642	17 23 42.9	74.95	1 11.6
13	2 34 21.96	10.838	17 52 16.4	67.82	1 12.2
14	2 38 32.10	10.001	18 17 57.6	60.60	1 12.4
15	2 42 21.80	9.136	18 40 44.5	53.30	1 12.2
16	2 45 50.41	+ 8.245	+ 19 0 35.5	+ 45.95	1 11.8
17	2 48 57.35	7.331	19 17 29.5	38.56	1 10.9
18	2 51 42.15	6.401	19 31 25.9	31.14	1 9.7
19	2 54 4.48	5.459	19 42 24.1	23.71	1 8.1
20	2 56 4.09	4.508	19 50 23.8	16.28	1 6.1
21	2 57 40.85	+ 3.555	+ 19 55 25.1	+ 8.84	1 3.8
22	2 58 54.78	2.607	19 57 28.7	+ 1.45	1 1.1
23	2 59 46.10	1.672	19 56 35.6	− 5.87	0 58.0
24	3 0 15.20	+ 0.758	19 52 47.6	13.10	0 54.5
25	3 0 22.68	− 0.128	19 46 7.4	20.21	0 50.7
26	3 0 9.34	− 0.975	+ 19 36 38.9	− 27.13	0 46.5
27	2 59 36.24	1.773	19 24 27.3	33.79	0 42.0
28	2 58 44.68	2.512	19 9 39.4	40.13	0 37.3
29	2 57 36.19	3.182	18 52 23.7	46.08	0 32.2
30	2 56 12.53	3.772	18 32 50.9	51.55	0 26.9
31	2 54 35.69	− 4.279	+ 18 11 13.8	− 56.44	0 21.3
32	2 52 47.83	− 4.692	+ 17 47 47.0	− 60.68	0 15.6

Day of the Month.	1st.	6th.	11th.	16th.	21st.	26th.
	″	″	″	″	″	″
Semidiameter . .	2.78	3.07	3.47	3.99	4.60	5.21
Hor. Parallax . .	7.32	8.08	9.15	10.52	12.12	13.74

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

GREENWICH MEAN TIME.

MAY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	2 54 35.69	− 4.279	+ 18 11 13.8	− 56.44	0 21.3
2	2 52 47.83	4.692	17 47 47.0	60.68	0 15.6
3	2 50 51.30	5.003	17 22 47.3	64.18	0 9.7
4	2 48 48.54	5.210	16 56 33.2	66.87	{0 23 3.8 57.7}
5	2 46 42.03	5.313	16 29 25.0	68.68	23 51.7
6	2 44 34.30	− 5.313	+ 16 1 43.9	− 69.60	23 45.7
7	2 42 27.80	5.212	15 33 51.5	69.61	23 39.7
8	2 40 24.89	5.016	15 6 9.6	68.72	23 33.8
9	2 38 27.79	4.729	14 38 59.6	66.97	23 28.1
10	2 36 38.53	4.362	14 12 41.6	64.40	23 22.5
11	2 34 58.93	− 3.925	+ 13 47 34.4	− 61.08	23 17.1
12	2 33 30.59	3.428	13 23 55.2	57.09	23 11.9
13	2 32 14.86	2.877	13 1 58.8	52.53	23 6.9
14	2 31 12.86	2.284	12 41 57.8	47.49	23 2.2
15	2 30 25.48	1.659	12 24 2.5	42.07	22 57.7
16	2 29 53.41	− 1.010	+ 12 8 20.8	− 36.36	22 53.5
17	2 29 37.12	− 0.345	11 54 58.8	30.44	22 49.6
18	2 29 36.91	+ 0.330	11 44 0.4	24.41	22 45.9
19	2 29 52.95	1.009	11 35 27.6	18.33	22 42.5
20	2 30 25.29	1.687	11 29 20.7	12.25	22 39.4
21	2 31 13.86	+ 2.359	+ 11 25 38.9	− 6.24	22 36.5
22	2 32 18.49	3.024	11 24 20.0	− 0.34	22 33.9
23	2 33 38.98	3.680	11 25 21.0	+ 5.40	22 31.5
24	2 35 15.09	4.325	11 28 38.0	10.98	22 29.4
25	2 37 6.52	4.957	11 34 6.5	16.36	22 27.6
26	2 39 12.96	+ 5.577	+ 11 41 41.6	+ 21.53	22 26.0
27	2 41 34.11	6.184	11 51 18.1	26.47	22 24.6
28	2 44 9.70	6.779	12 2 50.2	31.17	22 23.5
29	2 46 59.43	7.363	12 16 12.3	35.63	22 22.6
30	2 50 3.03	7.936	12 31 18.6	39.85	22 21.9
31	2 53 20.28	+ 8.500	+ 12 48 3.1	+ 43.82	22 21.5
32	2 56 50.99	+ 9.057	+ 13 6 19.8	+ 47.54	22 21.2

JUNE.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	2 56 50.99	+ 9.057	+ 13 6 19.8	+ 47.54	22 21.2
2	3 0 34.97	9.606	13 26 2.8	51.01	22 21.2
3	3 4 32.08	10.151	13 47 6.2	54.23	22 21.5
4	3 8 42.24	10.694	14 9 23.9	57.20	22 21.9
5	3 13 5.39	11.235	14 32 49.9	59.92	22 22.5
6	3 17 41.51	+ 11.775	+ 14 57 18.0	+ 62.38	22 23.4
7	3 22 30.59	12.316	15 22 41.9	64.57	22 24.5
8	3 27 32.68	12.860	15 48 55.5	66.51	22 25.8
9	3 32 47.85	13.406	16 15 52.4	68.17	22 27.3
10	3 38 16.21	13.958	16 43 25.7	69.55	22 29.0
11	3 43 57.87	+ 14.516	+ 17 11 28.5	+ 70.63	22 31.0
12	3 49 52.98	15.080	17 39 53.7	71.41	22 33.2
13	3 56 1.69	15.650	18 8 33.7	71.86	22 35.6
14	4 2 24.16	16.225	18 37 20.4	71.97	22 38.2
15	4 9 0.53	16.806	19 6 5.6	71.73	22 41.1
16	4 15 50.93	+ 17.394	+ 19 34 40.4	+ 71.10	22 44.3
17	4 22 55.46	17.984	20 2 55.3	70.07	22 47.6
18	4 30 14.16	18.574	20 30 40.4	68.62	22 51.2
19	4 37 47.02	19.163	20 57 45.3	66.72	22 55.1
20	4 45 33.93	19.745	21 23 59.0	64.34	22 59.1
21	4 53 34.68	+ 20.315	+ 21 49 9.8	+ 61.48	23 3.4
22	5 1 48.93	20.868	22 13 6.0	58.12	23 8.0
23	5 10 16.18	21.397	22 35 35.6	54.25	23 12.7
24	5 18 55.77	21.895	22 56 26.2	49.88	23 17.6
25	5 27 46.89	22.356	23 15 25.8	45.01	23 22.7
26	5 36 48.51	+ 22.769	+ 23 32 22.9	+ 39.67	23 28.0
27	5 45 59.45	23.131	23 47 6.6	33.90	23 33.4
28	5 55 18.34	23.433	23 59 27.0	27.75	23 38.9
29	6 4 43.69	23.668	24 9 15.6	21.26	23 44.4
30	6 14 13.88	23.834	24 16 25.4	14.51	23 50.0
31	6 23 47.21	+ 23.931	+ 24 20 51.0	+ 7.59	23 55.7
32	6 33 21.98	+ 23.957	+ 24 22 28.8	+ 0.57	. . . .

Day of the Month.	1st.	6th.	11th.	16th.	21st.	26th.	31st.
	″	″	″	″	″	″	″
Semidiameter .	5.72	5.99	5.93	5.61	5.15	4.66	4.19
Hor. Parallax .	15.09	15.77	15.62	14.79	13.58	12.27	11.04

Day of the Month.	5th.	10th.	15th.	20th.	25th.	30th.
	″	″	″	″	″	″
Semidiameter . .	3.76	3.39	3.08	2.84	2.65	2.55
Hor. Parallax . .	9.91	8.95	8.13	7.47	7.00	6.71

NOTE.—The sign + indicates north declinations; the sign − indicates south declinations.

GREENWICH MEAN TIME.

JULY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	6 23 47.21	+ 23.931	+ 24 20 51.0	+ 7.59	23 55.7
2	6 33 21.98	23.957	24 22 28.8	+ 0.57	. . . .
3	6 42 56.47	23.907	24 21 17.8	− 6.47	0 1.4
4	6 52 29.01	23.793	24 17 18.5	13.46	0 7.0
5	7 1 58.06	23.618	24 10 32.9	20.32	0 12.6
6	7 11 22.19	+ 23.385	+ 24 1 4.6	− 26.99	0 18.0
7	7 20 40.10	23.100	23 48 59.0	33.43	0 23.4
8	7 29 50.66	22.772	23 34 22.7	39.55	0 28.7
9	7 38 52.91	22.409	23 17 22.8	45.38	0 33.8
10	7 47 46.05	22.015	22 58 7.1	50.86	0 38.7
11	7 56 29.44	+ 21.598	+ 22 36 43.9	− 55.99	0 43.5
12	8 5 2.59	21.162	22 13 21.7	60.77	0 48.1
13	8 13 25.13	20.714	21 48 9.3	65.20	0 52.6
14	8 21 36.81	20.258	21 21 15.1	69.27	0 56.8
15	8 29 37.47	19.796	20 52 47.4	72.99	1 0.9
16	8 37 27.06	+ 19.335	+ 20 22 54.3	− 76.38	1 4.8
17	8 45 5.59	18.875	19 51 43.6	79.45	1 8.5
18	8 52 33.11	18.417	19 19 22.9	82.22	1 12.0
19	8 59 49.72	17.966	18 45 59.3	84.70	1 15.3
20	9 6 55.57	17.521	18 11 39.4	86.90	1 18.5
21	9 13 50.83	+ 17.084	+ 17 36 29.8	− 88.84	1 21.5
22	9 20 35.65	16.653	17 0 36.6	90.54	1 24.3
23	9 27 10.23	16.230	16 24 5.5	92.01	1 26.9
24	9 33 34.75	15.815	15 47 1.9	93.25	1 29.4
25	9 39 49.39	15.407	15 9 31.2	94.27	1 31.7
26	9 45 54.33	+ 15.007	+ 14 31 38.4	− 95.09	1 33.8
27	9 51 49.74	14.614	13 53 28.1	95.72	1 35.8
28	9 57 35.77	14.226	13 15 5.0	96.17	1 37.6
29	10 3 12.54	13.843	12 36 33.5	96.43	1 39.2
30	10 8 40.19	13.464	11 57 57.8	96.52	1 40.7
31	10 13 58.82	+ 13.089	+ 11 19 22.1	− 96.43	1 42.1
32	10 19 8.48	+ 12.716	+ 10 40 50.3	− 96.18	1 43.3

Day of the Month.	5th.	10th.	15th.	20th.	25th.	30th.
	″	″	″	″	″	″
Semidiameter . .	2.51	2.54	2.61	2.72	2.87	3.04
Hor. Parallax . .	6.62	6.69	6.88	7.18	7.56	8.02

AUGUST.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	10 19 8.48	+ 12.716	+ 10 40 50.3	− 96.18	1 43.3
2	10 24 9.24	12.346	10 2 26.6	95.77	1 44.4
3	10 29 1.12	11.976	9 24 14.8	95.19	1 45.3
4	10 33 44.12	11.606	8 46 18.8	94.45	1 46.1
5	10 38 18.21	11.234	8 8 42.6	93.54	1 46.7
6	10 42 43.32	+ 10.858	+ 7 31 30.2	− 92.47	1 47.1
7	10 46 59.37	10.477	6 54 45.5	91.23	1 47.4
8	10 51 6.22	10.091	6 18 32.6	89.81	1 47.6
9	10 55 3.70	9.698	5 42 55.8	88.21	1 47.6
10	10 58 51.61	9.294	5 7 59.6	86.44	1 47.4
11	11 2 29.71	+ 8.879	+ 4 33 48.4	− 84.46	1 47.1
12	11 5 57.69	8.451	4 0 27.2	82.27	1 46.6
13	11 9 15.23	8.008	3 28 1.1	79.87	1 46.0
14	11 12 21.95	7.549	2 56 35.4	77.24	1 45.1
15	11 15 17.43	7.071	2 26 15.7	74.35	1 44.1
16	11 18 1.18	+ 6.571	+ 1 57 8.3	− 71.21	1 42.9
17	11 20 32.67	6.049	1 29 19.7	67.79	1 41.5
18	11 22 51.32	5.501	1 2 56.8	64.07	1 39.8
19	11 24 56.51	4.926	0 38 7.2	60.02	1 37.9
20	11 26 47.55	4.322	+ 0 14 59.0	55.62	1 35.8
21	11 28 23.73	+ 3.687	− 0 6 19.1	− 50.84	1 33.5
22	11 29 44.28	3.020	0 25 38.0	45.67	1 30.9
23	11 30 48.43	2.320	0 42 48.0	40.09	1 28.0
24	11 31 35.38	1.587	0 57 38.6	34.05	1 24.8
25	11 32 4.35	0.822	1 9 58.8	27.55	1 21.3
26	11 32 14.58	+ 0.025	− 1 19 37.7	− 20.60	1 17.6
27	11 32 5.37	− 0.798	1 26 23.9	13.17	1 13.5
28	11 31 36.15	1.641	1 30 6.0	− 5.27	1 9.0
29	11 30 46.52	2.498	1 30 33.2	+ 3.07	1 4.2
30	11 29 36.23	3.360	1 27 35.5	11.80	0 59.1
31	11 28 5.31	− 4.214	− 1 21 4.5	+ 20.84	0 53.7
32	11 26 14.14	− 5.044	− 1 10 53.8	+ 30.09	0 47.9

Day of the Month.	4th.	9th.	14th.	19th.	24th.	29th.
	″	″	″	″	″	″
Semidiameter . .	3.25	3.49	3.78	4.12	4.50	4.89
Hor. Parallax . .	8.56	9.20	9.96	10.85	11.85	12.89

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

GREENWICH MEAN TIME.

SEPTEMBER.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	11 26 14.14	− 5.044	− 1 10 53.8	+ 30.09	0 47.9
2	11 24 3.53	5.832	0 56 59.8	39.42	0 41.8
3	11 21 34.73	6.557	0 39 22.6	48.65	0 35.4
4	11 18 49.49	7.197	− 0 18 6.9	57.58	0 28.7
5	11 15 50.16	7.727	+ 0 6 37.3	65.98	0 21.8
6	11 12 39.64	− 8.123	+ 0 34 34.4	+ 73.61	0 14.7
7	11 9 21.41	8.365	1 5 22.5	80.20	0 7.5
8	11 5 59.45	8.432	1 38 33.6	85.49	0 0.3 23 58.0
9	11 2 38.15	8.309	2 13 33.9	89.27	23 45.8
10	10 59 22.17	7.987	2 49 45.1	91.37	23 38.8
11	10 56 16.31	− 7.466	+ 3 26 25.5	+ 91.69	23 32.0
12	10 53 25.33	6.748	4 2 51.5	90.17	23 25.6
13	10 50 53.80	5.850	4 38 19.2	86.84	23 19.5
14	10 48 45.83	4.789	5 12 6.4	81.82	23 13.9
15	10 47 5.05	3.588	5 43 34.0	75.23	23 8.8
16	10 45 54.49	− 2.275	+ 6 12 6.8	+ 67.29	23 4.2
17	10 45 16.45	− 0.882	6 37 14.6	58.19	23 0.2
18	10 45 12.51	+ 0.561	6 58 32.8	48.18	22 56.8
19	10 45 43.54	2.025	7 15 42.1	37.49	22 53.9
20	10 46 49.69	3.483	7 28 28.8	26.34	22 51.6
21	10 48 30.49	+ 4.910	+ 7 36 44.5	+ 14.94	22 49.9
22	10 50 44.92	6.282	7 40 25.4	+ 3.48	22 48.7
23	10 53 31.44	7.581	7 39 32.0	− 7.86	22 48.0
24	10 56 48.14	8.794	7 34 9.1	18.96	22 47.8
25	11 0 32.77	9.908	7 24 24.8	29.65	22 48.0
26	11 4 42.89	+ 10.917	+ 7 10 30.1	− 39.81	22 48.6
27	11 9 15.92	11.817	6 52 38.6	49.37	22 49.5
28	11 14 9.25	12.609	6 31 5.7	58.25	22 50.7
29	11 19 20.30	13.294	6 6 8.2	66.41	22 52.2
30	11 24 46.57	13.878	5 38 3.8	73.82	22 53.9
31	11 30 25.67	+ 14.366	+ 5 7 10.8	− 80.47	22 55.8
32	11 36 15.45	+ 14.769	+ 4 33 47.3	− 86.36	22 57.8

OCTOBER.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	11 30 25.67	+ 14.366	+ 5 7 10.8	− 80.47	22 55.8
2	11 36 15.45	14.769	4 33 47.3	86.36	22 57.8
3	11 42 13.93	15.093	3 58 11.3	91.51	23 0.0
4	11 48 19.34	15.347	3 20 40.0	95.98	23 2.2
5	11 54 30.13	15.543	2 41 29.5	99.80	23 4.5
6	12 0 44.98	+ 15.688	+ 2 0 55.0	− 102.98	23 6.9
7	12 7 2.76	15.789	1 19 10.7	105.61	23 9.3
8	12 13 22.53	15.854	+ 0 36 29.5	107.73	23 11.7
9	12 19 43.51	15.890	− 0 6 56.8	109.38	23 14.1
10	12 26 5.07	15.903	0 50 57.6	110.62	23 16.5
11	12 32 26.72	+ 15.898	− 1 35 23.5	− 111.48	23 19.0
12	12 38 48.06	15.879	2 20 6.1	112.01	23 21.4
13	12 45 8.80	15.849	3 4 57.7	112.25	23 23.8
14	12 51 28.75	15.812	3 49 51.6	112.21	23 26.1
15	12 57 47.77	15.772	4 34 41.7	111.94	23 28.5
16	13 4 5.75	+ 15.728	− 5 19 22.8	− 111.47	23 30.8
17	13 10 22.67	15.684	6 3 50.3	110.80	23 33.2
18	13 16 38.55	15.640	6 47 59.9	109.97	23 35.5
19	13 22 53.39	15.598	7 31 47.9	108.98	23 37.8
20	13 29 7.24	15.559	8 15 10.9	107.89	23 40.0
21	13 35 20.19	+ 15.523	− 8 58 5.9	− 106.68	23 42.3
22	13 41 32.34	15.491	9 40 30.3	105.35	23 44.6
23	13 47 43.78	15.464	10 22 21.6	103.92	23 46.8
24	13 53 54.61	15.441	11 3 37.7	102.41	23 49.1
25	14 0 4.94	15.422	11 44 16.5	100.81	23 51.3
26	14 6 14.91	+ 15.409	− 12 24 16.1	− 99.14	23 53.5
27	14 12 24.63	15.401	13 3 34.8	97.40	23 55.7
28	14 18 34.22	15.398	13 42 11.1	95.60	23 57.9
29	14 24 43.78	15.399	14 20 3.3	93.74	. . . .
30	14 30 53.45	15.406	14 57 10.0	91.82	0 0.2
31	14 37 3.32	+ 15.417	− 15 33 29.9	− 89.83	0 2.4
32	14 43 13.50	+ 15.432	− 16 9 1.4	− 87.79	0 4.6

Day of the Month.	3d.	8th.	13th.	18th.	23d.	28th.
	″	″	″	″	″	″
Semidiameter .	5.21	5.26	4.95	4.36	3.74	3.23
Hor. Parallax .	13.71	13.87	13.04	11.49	9.84	8.50

Day of the Month.	3d.	8th.	13th.	18th.	23d.	28th.
	″	″	″	″	″	″
Semidiameter .	2.87	2.64	2.49	2.40	2.34	2.32
Hor. Parallax .	7.56	6.94	6.55	6.31	6.18	6.12

NOTE.—The sign + indicates north declinations; the sign − indicates south declinations.

GREENWICH MEAN TIME.

NOVEMBER.

Day of Month	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	14 43 13.50	+15.432	−16 9 1.4	−87.79	0 4.6
2	14 49 24.10	15.452	16 43 43.6	85.70	0 6.8
3	14 55 35.21	15.475	17 17 34.7	83.56	0 9.1
4	15 1 46.91	15.502	17 50 33.8	81.36	0 11.3
5	15 7 59.29	15.531	18 22 39.7	79.11	0 13.6
6	15 14 12.41	+15.563	−18 53 50.8	−76.81	0 15.9
7	15 20 26.34	15.597	19 24 6.0	74.45	0 18.2
8	15 26 41.11	15.634	19 53 24.0	72.04	0 20.5
9	15 32 56.77	15.671	20 21 43.5	69.58	0 22.8
10	15 39 13.34	15.709	20 49 3.3	67.06	0 25.1
11	15 45 30.83	+15.749	−21 15 21.9	−64.49	0 27.5
12	15 51 49.24	15.787	21 40 38.1	61.86	0 29.9
13	15 58 8.53	15.821	22 4 50.6	59.17	0 32.3
14	16 4 28.65	15.854	22 27 57.6	56.42	0 34.7
15	16 10 49.53	15.885	22 49 57.8	53.61	0 37.1
16	16 17 11.09	+15.911	−23 10 49.9	−50.74	0 39.5
17	16 23 33.21	15.931	23 30 32.5	47.80	0 41.9
18	16 29 55.73	15.944	23 49 3.9	44.81	0 44.3
19	16 36 18.46	15.949	24 6 22.8	41.77	0 46.8
20	16 42 41.20	15.944	24 22 27.8	38.65	0 49.2
21	16 49 3.70	+15.928	−24 37 17.2	−35.47	0 51.7
22	16 55 25.66	15.898	24 50 49.7	32.23	0 54.1
23	17 1 46.70	15.852	25 3 3.7	28.93	0 56.5
24	17 8 6.45	15.788	25 13 57.9	25.58	0 58.9
25	17 14 24.46	15.705	25 23 31.2	22.19	1 1.3
26	17 20 40.18	+15.599	−25 31 42.3	−18.75	1 3.6
27	17 26 53.00	15.464	25 38 30.1	15.26	1 5.9
28	17 33 2.23	15.299	25 43 53.7	11.72	1 8.1
29	17 39 7.10	15.100	25 47 52.2	8.16	1 10.2
30	17 45 6.71	14.860	25 50 25.0	4.58	1 12.2
31	17 51 0.03	+14.575	−25 51 31.8	−0.99	1 14.2
32	17 56 45.90	+14.239	−25 51 12.5	+2.60	1 16.0

DECEMBER.

Day of Month	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	17 51 0.03	+14.575	−25 51 31.8	−0.99	1 14.2
2	17 56 45.90	14.239	25 51 12.5	+2.60	1 16.0
3	18 2 23.02	13.844	25 49 27.4	6.16	1 17.7
4	18 7 49.91	13.384	25 46 17.3	9.68	1 19.2
5	18 13 4.88	12.850	25 41 43.2	13.14	1 20.5
6	18 18 6.04	+12.232	−25 35 46.8	+16.53	1 21.5
7	18 22 51.26	11.520	25 28 30.3	19.81	1 22.3
8	18 27 18.19	10.704	25 19 56.7	22.96	1 22.8
9	18 31 24.16	9.772	25 10 9.4	25.95	1 23.0
10	18 35 6.24	8.713	24 59 12.9	28.73	1 22.7
11	18 38 21.28	+7.517	−24 47 12.2	+31.29	1 22.0
12	18 41 5.88	6.172	24 34 12.9	33.61	1 20.7
13	18 43 16.38	4.674	24 20 21.4	35.64	1 18.9
14	18 44 49.04	3.022	24 5 44.6	37.37	1 16.5
15	18 45 40.25	+1.222	23 50 29.9	38.80	1 13.4
16	18 45 46.66	−0.710	−23 34 44.7	+39.92	1 9.5
17	18 45 5.36	2.747	23 18 36.3	40.73	1 4.9
18	18 43 34.30	4.845	23 2 11.7	41.26	0 59.4
19	18 41 12.76	6.944	22 45 37.8	41.51	0 53.1
20	18 38 1.63	8.965	22 29 1.1	41.48	0 46.0
21	18 34 3.79	−10.818	−22 12 28.6	+41.16	0 38.1
22	18 29 24.44	12.408	21 56 7.9	40.50	0 29.5
23	18 24 11.03	13.642	21 40 8.3	39.39	0 20.4
24	18 18 33.00	14.447	21 24 41.7	37.73	0 10.9
25	18 12 41.32	14.774	21 10 2.4	35.43	0 1.2 / 23 51.4
26	18 6 47.70	−14.611	−20 56 26.9	+32.40	23 41.8
27	18 1 3.63	13.986	20 44 12.6	28.65	23 32.5
28	17 55 39.61	12.951	20 33 36.5	24.24	23 23.6
29	17 50 44.53	11.592	20 24 53.3	19.28	23 15.4
30	17 46 25.16	9.990	20 18 13.9	13.96	23 7.8
31	17 42 46.22	−8.238	−20 13 44.1	+8.49	23 1.0
32	17 39 50.31	−6.415	−20 11 25.2	+3.10	22 55.0

Day of the Month.	2d.	7th.	12th.	17th.	22d.	27th.
	″	″	″	″	″	″
Semidiameter . .	2.33	2.35	2.40	2.48	2.59	2.75
Hor. Parallax . .	6.13	6.20	6.33	6.53	6.83	7.24

Day of the Month.	2d.	7th.	12th.	17th.	22d.	27th.	32d.
	″	″	″	″	″	″	″
Semidiameter .	2.97	3.28	3.72	4.28	4.80	4.92	4.57
Hor. Parallax .	7.82	8.65	9.80	11.28	12.66	12.98	12.03

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

GREENWICH MEAN TIME.

JANUARY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	19 21 15.88	+ 13.584	− 23 10 34.8	+ 21.66	0 41.2
2	19 26 41.53	13.552	23 1 34.4	23.40	0 42.7
3	19 32 6.37	13.517	22 51 51.7	25.16	0 44.2
4	19 37 30.36	13.481	22 41 27.1	26.89	0 45.7
5	19 42 53.45	13.448	22 30 21.1	28.60	0 47.1
6	19 48 15.59	+ 13.402	− 22 18 34.3	+ 30.30	0 48.5
7	19 53 36.74	13.360	22 6 7.1	31.97	0 49.9
8	19 58 56.86	13.316	21 52 59.9	33.62	0 51.3
9	20 4 15.92	13.271	21 39 13.4	35.25	0 52.7
10	20 9 33.87	13.224	21 24 48.1	36.85	0 54.1
11	20 14 50.68	+ 13.176	− 21 9 44.6	+ 38.43	0 55.4
12	20 20 6.32	13.127	20 54 3.5	39.98	0 56.7
13	20 25 20.77	13.077	20 37 45.5	41.51	0 58.0
14	20 30 34.00	13.026	20 20 51.3	43.01	0 59.3
15	20 35 46.00	12.974	20 3 21.4	44.48	1 0.6
16	20 40 56.75	+ 12.922	− 19 45 16.5	+ 45.93	1 1.8
17	20 46 6.24	12.869	19 26 37.3	47.34	1 3.0
18	20 51 14.46	12.816	19 7 24.4	48.72	1 4.2
19	20 56 21.40	12.763	18 47 38.7	50.08	1 5.4
20	21 1 27.06	12.709	18 27 20.8	51.41	1 6.5
21	21 6 31.43	+ 12.655	− 18 6 31.4	+ 52.71	1 7.7
22	21 11 34.51	12.601	17 45 11.3	53.97	1 8.8
23	21 16 36.29	12.547	17 23 21.2	55.21	1 9.9
24	21 21 36.78	12.494	17 1 1.8	56.41	1 10.9
25	21 26 35.98	12.440	16 38 14.0	57.58	1 11.9
26	21 31 33.91	+ 12.387	− 16 14 58.5	+ 58.71	1 13.0
27	21 36 30.57	12.334	15 51 16.0	59.81	1 14.0
28	21 41 25.97	12.282	15 27 7.4	60.89	1 15.0
29	21 46 20.12	12.230	15 2 33.4	61.94	1 15.9
30	21 51 13.03	12.179	14 37 34.8	62.95	1 16.9
31	21 56 4.72	+ 12.129	− 14 12 12.5	+ 63.92	1 17.8
32	22 0 55.21	+ 12.079	− 13 46 27.2	+ 64.85	1 18.7

FEBRUARY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	22 0 55.21	+ 12.079	− 13 46 27.2	+ 64.85	1 18.7
2	22 5 44.52	12.030	13 20 19.7	65.76	1 19.6
3	22 10 32.66	11.982	12 53 50.7	66.64	1 20.4
4	22 15 19.66	11.935	12 27 1.2	67.48	1 21.2
5	22 20 5.54	11.889	11 59 51.9	68.29	1 22.1
6	22 24 50.33	+ 11.844	− 11 32 23.7	+ 69.06	1 22.9
7	22 29 34.06	11.801	11 4 37.3	69.80	1 23.7
8	22 34 16.75	11.758	10 36 33.5	70.51	1 24.4
9	22 38 58.44	11.717	10 8 13.1	71.18	1 25.2
10	22 43 39.16	11.677	9 39 36.9	71.83	1 25.9
11	22 48 18.94	+ 11.639	− 9 10 45.6	+ 72.44	1 26.6
12	22 52 57.82	11.602	8 41 40.1	73.02	1 27.3
13	22 57 35.84	11.567	8 12 21.1	73.56	1 28.0
14	23 2 13.03	11.533	7 42 49.4	74.08	1 28.7
15	23 6 49.44	11.501	7 13 5.6	74.56	1 29.4
16	23 11 25.10	+ 11.471	− 6 43 10.6	+ 75.01	1 30.0
17	23 16 0.05	11.442	6 13 5.1	75.43	1 30.7
18	23 20 34.34	11.415	5 42 49.9	75.82	1 31.3
19	23 25 8.00	11.390	5 12 25.6	76.19	1 31.9
20	23 29 41.08	11.367	4 41 53.1	76.52	1 32.5
21	23 34 13.62	+ 11.345	− 4 11 13.0	+ 76.82	1 33.1
22	23 38 45.65	11.325	3 40 26.2	77.09	1 33.7
23	23 43 17.23	11.307	3 9 33.3	77.32	1 34.3
24	23 47 48.39	11.291	2 38 35.2	77.53	1 34.9
25	23 52 19.17	11.276	2 7 32.5	77.70	1 35.4
26	23 56 49.62	+ 11.263	− 1 36 26.1	+ 77.84	1 36.0
27	0 1 19.77	11.251	1 5 16.6	77.95	1 36.6
28	0 5 49.67	11.241	0 34 4.8	78.03	1 37.1
29	0 10 19.36	11.233	− 0 2 51.5	78.08	1 37.7
30	0 14 48.87	11.227	+ 0 28 22.6	78.10	1 38.2
31	0 19 18.25	+ 11.223	+ 0 59 36.8	+ 78.09	1 38.8
32	0 23 47.54	+ 11.220	+ 1 30 50.3	+ 78.04	1 39.3

Day of the Month.	1st.	6th.	11th.	16th.	21st.	26th.	31st.
	″	″	″	″	″	″	″
Semidiameter .	5.07	5.10	5.12	5.15	5.19	5.22	5.26
Hor. Parallax .	5.22	5.25	5.27	5.30	5.34	5.38	5.42

Day of the Month.	5th.	10th.	15th.	20th.	25th.
	″	″	″	″	″
Semidiameter	5.31	5.36	5.41	5.47	5.53
Horizontal Parallax . .	5.46	5.51	5.57	5.63	5.69

NOTE.—The sign + indicates north declinations; the sign — indicates south declinations.

GREENWICH MEAN TIME.

MARCH.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	0 10 19.36	+11.233	− 0 2 51.5	+78.08	1 37.7
2	0 14 48.87	11.227	+ 0 28 22.6	78.10	1 38.2
3	0 19 18.25	11.223	0 59 36.8	78.09	1 38.8
4	0 23 47.54	11.220	1 30 50.3	78.04	1 39.3
5	0 28 16.78	11.218	2 2 2.3	77.95	1 39.9
6	0 32 46.00	+11.219	+ 2 33 12.0	+77.84	1 40.4
7	0 37 15.25	11.220	3 4 18.7	77.70	1 40.9
8	0 41 44.56	11.223	3 35 21.6	77.53	1 41.5
9	0 46 13.98	11.228	4 6 20.1	77.33	1 42.0
10	0 50 43.54	11.235	4 37 13.4	77.09	1 42.6
11	0 55 13.29	+11.244	+ 5 8 0.7	+76.83	1 43.1
12	0 59 43.26	11.255	5 38 41.3	76.54	1 43.7
13	1 4 13.51	11.267	6 9 14.6	76.22	1 44.3
14	1 8 44.07	11.281	6 39 39.7	75.86	1 44.8
15	1 13 14.98	11.296	7 9 56.0	75.48	1 45.4
16	1 17 46.28	+11.313	+ 7 40 2.7	+75.07	1 46.0
17	1 22 18.01	11.332	8 9 59.1	74.63	1 46.6
18	1 26 50.21	11.352	8 39 44.5	74.16	1 47.2
19	1 31 22.91	11.374	9 9 18.2	73.65	1 47.8
20	1 35 56.16	11.398	9 38 39.4	73.11	1 48.4
21	1 40 29.98	+11.423	+10 7 47.5	+72.55	1 49.0
22	1 45 4.42	11.450	10 36 41.8	71.96	1 49.6
23	1 49 39.51	11.478	11 5 21.4	71.33	1 50.3
24	1 54 15.28	11.507	11 33 45.6	70.67	1 50.9
25	1 58 51.76	11.536	12 1 53.7	69.99	1 51.6
26	2 3 28.99	+11.567	+12 29 45.0	+69.28	1 52.3
27	2 8 6.98	11.599	12 57 18.7	68.53	1 53.0
28	2 12 45.77	11.632	13 24 34.2	67.75	1 53.7
29	2 17 25.38	11.667	13 51 30.6	66.94	1 54.4
30	2 22 5.84	11.703	14 18 7.2	66.10	1 55.1
31	2 26 47.15	+11.739	+14 44 23.2	+65.23	1 55.9
32	2 31 29.34	+11.776	+15 10 17.9	+64.33	1 56.6

Day of the Month.	2d.	7th.	12th.	17th.	22d.	27th.
	″	″	″	″	″	″
Semidiameter . .	5.60	5.67	5.75	5.84	5.93	6.04
Hor. Parallax . .	5.76	5.84	5.92	6.01	6.11	6.22

APRIL.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	2 31 29.34	+11.776	+15 10 17.9	+64.33	1 56.6
2	2 36 12.43	11.814	15 35 50.5	63.40	1 57.4
3	2 40 56.43	11.852	16 1 0.3	62.44	1 58.2
4	2 45 41.36	11.891	16 25 46.6	61.43	1 59.0
5	2 50 27.22	11.930	16 50 8.6	60.40	1 59.8
6	2 55 14.02	+11.970	+17 14 5.6	+59.33	2 0.7
7	3 0 1.77	12.009	17 37 36.8	58.24	2 1.5
8	3 4 50.47	12.049	18 0 41.5	57.13	2 2.4
9	3 9 40.13	12.089	18 23 19.0	55.98	2 3.3
10	3 14 30.76	12.129	18 45 28.7	54.80	2 4.2
11	3 19 22.35	+12.169	+19 7 9.8	+53.60	2 5.1
12	3 24 14.91	12.209	19 28 21.6	52.37	2 6.1
13	3 29 8.42	12.249	19 49 3.6	51.11	2 7.0
14	3 34 2.89	12.288	20 9 15.0	49.82	2 8.0
15	3 38 58.31	12.328	20 28 55.3	48.51	2 9.0
16	3 43 54.67	+12.367	+20 48 3.8	+47.17	2 10.0
17	3 48 51.96	12.406	21 6 39.9	45.80	2 11.0
18	3 53 50.16	12.444	21 24 42.9	44.41	2 12.0
19	3 58 49.26	12.481	21 42 12.2	43.00	2 13.0
20	4 3 49.23	12.516	21 59 7.2	41.56	2 14.1
21	4 8 50.05	+12.552	+22 15 27.4	+40.10	2 15.2
22	4 13 51.70	12.586	22 31 12.3	38.62	2 16.3
23	4 18 54.15	12.619	22 46 21.3	37.11	2 17.4
24	4 23 57.37	12.650	23 0 53.9	35.58	2 18.5
25	4 29 1.32	12.679	23 14 49.5	34.03	2 19.6
26	4 34 5.98	+12.707	+23 28 7.7	+32.46	2 20.7
27	4 39 11.29	12.734	23 40 48.1	30.88	2 21.9
28	4 44 17.20	12.758	23 52 50.2	29.28	2 23.1
29	4 49 23.68	12.781	24 4 13.5	27.66	2 24.2
30	4 54 30.67	12.801	24 14 57.6	26.02	2 25.4
31	4 59 38.11	+12.819	+24 25 2.2	+24.36	2 26.6
32	5 4 45.96	+12.835	+24 34 26.9	+22.68	2 27.8

Day of the Month.	1st.	6th.	11th.	16th.	21st.	26th.
	″	″	″	″	″	″
Semidiameter . .	6.15	6.27	6.40	6.55	6.70	6.87
Hor. Parallax . .	6.34	6.46	6.59	6.74	6.90	7.07

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

GREENWICH MEAN TIME.

MAY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	4 59 38.11	+12.819	+24 25 2.2	+24.36	2 26.6
2	5 4 45.96	12.835	24 34 26.9	22.68	2 27.8
3	5 9 54.14	12.847	24 43 11.3	21.00	2 29.0
4	5 15 2.60	12.857	24 51 15.2	19.31	2 30.2
5	5 20 11.28	12.865	24 58 38.3	17.61	2 31.4
6	5 25 20.11	+12.870	+25 5 20.5	+15.90	2 32.6
7	5 30 29.03	12.872	25 11 21.5	14.18	2 33.8
8	5 35 37.97	12.872	25 16 41.1	12.45	2 35.0
9	5 40 46.87	12.869	25 21 19.2	10.72	2 36.2
10	5 45 55.66	12.863	25 25 15.7	8.99	2 37.4
11	5 51 4.28	+12.854	+25 28 30.5	+7.26	2 38.6
12	5 56 12.66	12.842	25 31 3.7	5.52	2 39.8
13	6 1 20.74	12.828	25 32 55.2	3.78	2 41.0
14	6 6 28.44	12.811	25 34 5.1	2.05	2 42.2
15	6 11 35.70	12.791	25 34 33.4	+0.32	2 43.4
16	6 16 42.46	+12.769	+25 34 20.2	−1.41	2 44.5
17	6 21 48.64	12.744	25 33 25.6	3.13	2 45.7
18	6 26 54.18	12.716	25 31 49.7	4.85	2 46.8
19	6 31 59.02	12.685	25 29 32.8	6.56	2 48.0
20	6 37 3.09	12.652	25 26 35.0	8.25	2 49.1
21	6 42 6.32	+12.616	+25 22 56.7	−9.94	2 50.2
22	6 47 8.65	12.577	25 18 38.0	11.61	2 51.3
23	6 52 10.03	12.536	25 13 39.3	13.27	2 52.4
24	6 57 10.39	12.492	25 8 0.9	14.92	2 53.4
25	7 2 9.66	12.446	25 1 43.1	16.56	2 54.5
26	7 7 7.79	+12.397	+24 54 46.2	−18.18	2 55.5
27	7 12 4.71	12.345	24 47 10.7	19.78	2 56.5
28	7 17 0.36	12.291	24 38 57.0	21.36	2 57.5
29	7 21 54.68	12.234	24 30 5.6	22.92	2 58.5
30	7 26 47.61	12.175	24 20 36.9	24.46	2 59.4
31	7 31 39.09	+12.113	+24 10 31.5	−25.98	3 0.3
32	7 36 29.07	+12.049	+23 59 49.8	−27.48	3 1.2

JUNE.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	7 36 29.07	+12.049	+23 59 49.8	−27.48	3 1.2
2	7 41 17.48	11.982	23 48 32.4	28.95	3 2.1
3	7 46 4.27	11.914	23 36 40.0	30.40	3 2.9
4	7 50 49.39	11.843	23 24 13.1	31.83	3 3.7
5	7 55 32.80	11.771	23 11 12.3	33.23	3 4.5
6	8 0 14.45	+11.697	+22 57 38.2	−34.60	3 5.2
7	8 4 54.29	11.621	22 43 31.6	35.94	3 5.9
8	8 9 32.29	11.544	22 28 53.1	37.26	3 6.6
9	8 14 8.42	11.465	22 13 43.3	38.56	3 7.3
10	8 18 42.64	11.385	21 58 3.0	39.81	3 7.9
11	8 23 14.91	+11.303	+21 41 52.7	−41.04	3 8.5
12	8 27 45.20	11.220	21 25 13.2	42.24	3 9.1
13	8 32 13.49	11.136	21 8 5.3	43.41	3 9.6
14	8 36 39.76	11.051	20 50 29.6	44.55	3 10.1
15	8 41 3.98	10.965	20 32 26.8	45.67	3 10.5
16	8 45 26.12	+10.878	+20 13 57.7	−46.75	3 10.9
17	8 49 46.16	10.790	19 55 3.1	47.80	3 11.3
18	8 54 4.08	10.701	19 35 43.6	48.82	3 11.7
19	8 58 19.87	10.612	19 16 0.0	49.81	3 12.0
20	9 2 33.50	10.522	18 55 52.9	50.77	3 12.3
21	9 6 44.97	+10.432	+18 35 23.1	−51.70	3 12.5
22	9 10 54.25	10.340	18 14 31.3	52.60	3 12.7
23	9 15 1.34	10.248	17 53 18.3	53.47	3 12.9
24	9 19 6.20	10.155	17 31 44.9	54.31	3 13.0
25	9 23 8.83	10.061	17 9 51.8	55.11	3 13.1
26	9 27 9.20	+9.967	+16 47 39.8	−55.88	3 13.2
27	9 31 7.28	9.872	16 25 9.6	56.62	3 13.2
28	9 35 3.06	9.776	16 2 22.1	57.33	3 13.2
29	9 38 56.52	9.678	15 39 18.1	58.00	3 13.1
30	9 42 47.62	9.579	15 15 58.4	58.63	3 13.0
31	9 46 36.34	+9.479	+14 52 23.9	−59.24	3 12.9
32	9 50 22.65	+9.378	+14 28 35.3	−59.82	3 12.7

Day of the Month.	1st.	6th.	11th.	16th.	21st.	26th.	31st.
	″	″	″	″	″	″	″
Semidiameter.	7.05	7.25	7.47	7.71	7.97	8.26	8.58
Hor. Parallax.	7.26	7.47	7.70	7.94	8.21	8.51	8.83

Day of the Month.	5th.	10th.	15th.	20th.	25th.	30th.
	″	″	″	″	″	″
Semidiameter . .	8.92	9.30	9.72	10.19	10.70	11.27
Hor. Parallax . .	9.19	9.58	10.01	10.49	11.02	11.61

NOTE.—The sign + indicates north declinations; the sign − indicates south declinations.

GREENWICH MEAN TIME.

JULY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	9 46 36.34	+9.479	+14 52 23.9	−59.24	3 12.9
2	9 50 22.65	9.378	14 28 35.3	59.82	3 12.7
3	9 54 6.53	9.276	14 4 33.4	60.36	3 12.5
4	9 57 47.95	9.173	13 40 19.0	60.86	3 12.2
5	10 1 26.88	9.069	13 15 52.9	61.33	3 11.9
6	10 5 3.30	+8.964	+12 51 16.0	−61.75	3 11.6
7	10 8 37.19	8.858	12 26 29.2	62.15	3 11.2
8	10 12 8.51	8.751	12 1 33.2	62.51	3 10.8
9	10 15 37.24	8.642	11 36 28.9	62.84	3 10.3
10	10 19 3.34	8.531	11 11 17.1	63.14	3 9.8
11	10 22 26.78	+8.420	+10 45 58.5	−63.40	3 9.3
12	10 25 47.53	8.308	10 20 34.0	63.63	3 8.7
13	10 29 5.55	8.193	9 55 4.4	63.82	3 8.0
14	10 32 20.81	8.077	9 29 30.5	63.98	3 7.3
15	10 35 33.27	7.959	9 3 53.2	64.11	3 6.6
16	10 38 42.89	+7.840	+8 38 13.2	−64.21	3 5.8
17	10 41 49.62	7.719	8 12 31.4	64.27	3 5.0
18	10 44 53.42	7.596	7 46 48.6	64.29	3 4.1
19	10 47 54.22	7.470	7 21 5.6	64.28	3 3.1
20	10 50 51.98	7.342	6 55 23.3	64.23	3 2.1
21	10 53 46.63	+7.211	+6 29 42.5	−64.15	3 1.1
22	10 56 38.11	7.078	6 4 4.2	64.03	3 0.0
23	10 59 26.36	6.941	5 38 29.2	63.88	2 58.9
24	11 2 11.29	6.801	5 12 58.4	63.68	2 57.7
25	11 4 52.81	6.657	4 47 32.9	63.44	2 56.4
26	11 7 30.84	+6.510	+4 22 13.6	−63.16	2 55.1
27	11 10 5.28	6.359	3 57 1.5	62.83	2 53.7
28	11 12 36.02	6.201	3 31 57.8	62.46	2 52.3
29	11 15 2.93	6.039	3 7 3.6	62.04	2 50.8
30	11 17 25.90	5.873	2 42 20.1	61.58	2 49.2
31	11 19 44.81	+5.701	+2 17 48.5	−61.08	2 47.6
32	11 21 59.53	+5.523	+1 53 30.0	−60.50	2 45.9

AUGUST.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	11 21 59.53	+5.523	+1 53 30.0	−60.50	2 45.9
2	11 24 9.92	5.340	1 29 25.8	59.87	2 44.1
3	11 26 15.85	5.151	1 5 37.3	59.19	2 42.2
4	11 28 17.16	4.956	0 42 5.8	58.45	2 40.3
5	11 30 13.70	4.754	+0 18 52.6	57.65	2 38.3
6	11 32 5.32	+4.545	−0 4 0.7	−56.79	2 36.2
7	11 33 51.85	4.329	0 26 32.7	55.87	2 34.1
8	11 35 33.12	4.107	0 48 41.8	54.88	2 31.8
9	11 37 8.96	3.877	1 10 26.5	53.83	2 29.4
10	11 38 39.20	3.640	1 31 45.2	52.71	2 27.0
11	11 40 3.65	+3.395	−1 52 36.1	−51.52	2 24.5
12	11 41 22.14	3.143	2 12 57.4	50.25	2 21.8
13	11 42 34.47	2.883	2 32 47.3	48.90	2 19.1
14	11 43 40.47	2.615	2 52 3.9	47.47	2 16.2
15	11 44 39.95	2.339	3 10 45.3	45.96	2 13.3
16	11 45 32.71	+2.055	−3 28 49.5	−44.36	2 10.2
17	11 46 18.57	1.764	3 46 14.4	42.68	2 7.0
18	11 46 57.35	1.465	4 2 57.6	40.90	2 3.7
19	11 47 28.86	1.159	4 18 57.0	39.03	2 0.3
20	11 47 52.93	0.845	4 34 10.2	37.05	1 56.8
21	11 48 9.38	+0.524	−4 48 34.8	−34.97	1 53.1
22	11 48 18.06	+0.197	5 2 8.2	32.79	1 49.3
23	11 48 18.81	−0.137	5 14 47.8	30.49	1 45.4
24	11 48 11.49	0.475	5 26 30.9	28.08	1 41.3
25	11 47 55.99	0.818	5 37 14.7	25.55	1 37.1
26	11 47 32.20	−1.165	−5 46 56.4	−22.91	1 32.8
27	11 47 0.06	1.514	5 55 33.2	20.15	1 28.3
28	11 46 19.56	1.863	6 3 2.5	17.28	1 23.7
29	11 45 30.71	2.210	6 9 21.5	14.30	1 18.9
30	11 44 33.56	2.554	6 14 27.7	11.21	1 14.1
31	11 43 28.21	−2.892	−6 18 18.8	−8.04	1 9.1
32	11 42 14.82	−3.222	−6 20 52.8	−4.77	1 3.9

Day of the Month.	5th.	10th.	15th.	20th.	25th.	30th.
	″	″	″	″	″	″
Semidiameter . .	11.91	12.63	13.43	14.32	15.33	16.47
Hor. Parallax .	12.27	13.00	13.82	14.74	15.79	16.96

Day of the Month.	4th.	9th.	14th.	19th.	24th.	29th.
	″	″	″	″	″	″
Semidiameter . .	17.76	19.20	20.80	22.55	24.40	26.25
Hor. Parallax . .	18.28	19.77	21.42	23.21	25.12	27.04

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

GREENWICH MEAN TIME.

SEPTEMBER.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	11 42 14.82	−3.222	−6 20 52.8	− 4.77	1 3.9
2	11 40 53.63	3.542	6 22 7.7	− 1.43	0 58.6
3	11 39 24.93	3.848	6 22 1.8	+ 1.95	0 53.2
4	11 37 49.05	4.139	6 20 34.1	5.37	0 47.7
5	11 36 6.41	4.411	6 17 44.0	8.81	0 42.1
6	11 34 17.51	−4.661	−6 13 31.2	+12.25	0 36.3
7	11 32 22.89	4.886	6 7 56.1	15.66	0 30.5
8	11 30 23.17	5.085	6 0 59.7	19.02	0 24.5
9	11 28 19.04	5.254	5 52 43.5	22.30	0 18.5
10	11 26 11.22	5.392	5 43 9.7	25.48	0 12.5
11	11 24 0.50	−5.496	−5 32 21.2	+28.52	0 6.4
12	11 21 47.70	5.565	5 20 21.7	31.40	0 0.3 23 54.2
13	11 19 33.67	5.598	5 7 15.5	34.09	23 48.0
14	11 17 19.28	5.595	4 53 7.3	36.56	23 41.8
15	11 15 5.41	5.556	4 38 2.2	38.81	23 35.7
16	11 12 52.94	−5.480	−4 22 6.0	+40.82	23 29.6
17	11 10 42.72	5.368	4 5 24.9	42.55	23 23.6
18	11 8 35.59	5.222	3 48 5.3	44.02	23 17.6
19	11 6 32.34	5.044	3 30 13.9	45.21	23 11.7
20	11 4 33.72	4.836	3 11 57.2	46.13	23 5.9
21	11 2 40.45	−4.599	−2 53 21.8	+46.77	23 0.2
22	11 0 53.16	4.337	2 34 34.5	47.13	22 54.6
23	10 59 12.45	4.051	2 15 41.7	47.22	22 49.1
24	10 57 38.86	3.744	1 56 50.0	47.05	22 43.7
25	10 56 12.86	3.419	1 38 5.3	46.63	22 38.5
26	10 54 54.86	−3.078	−1 19 33.4	+45.98	22 33.4
27	10 53 45.20	2.724	1 1 19.6	45.12	22 28.5
28	10 52 44.17	2.360	0 43 29.2	44.05	22 23.7
29	10 51 51.99	1.987	0 26 6.9	42.79	22 19.0
30	10 51 8.85	1.608	−0 9 16.7	41.37	22 14.5
31	10 50 34.86	−1.225	+0 6 57.4	+39.79	22 10.2
32	10 50 10.07	−0.841	+0 22 31.8	+38.06	22 5.9

OCTOBER.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	10 50 34.86	−1.225	+0 6 57.4	+39.79	22 10.2
2	10 50 10.07	0.841	0 22 31.8	38.06	22 5.9
3	10 49 54.50	0.457	0 37 23.4	36.22	22 1.9
4	10 49 48.13	−0.074	0 51 29.7	34.29	21 58.0
5	10 49 50.91	+0.306	1 4 48.5	32.27	21 54.3
6	10 50 2.74	+0.681	+1 17 17.8	+30.17	21 50.7
7	10 50 23.50	1.050	1 28 55.9	28.00	21 47.2
8	10 50 53.04	1.412	1 39 41.6	25.79	21 43.9
9	10 51 31.19	1.767	1 49 33.9	23.55	21 40.7
10	10 52 17.76	2.114	1 58 32.0	21.28	21 37.7
11	10 53 12.52	+2.451	+2 6 35.4	+19.00	21 34.8
12	10 54 15.27	2.778	2 13 44.0	16.72	21 32.0
13	10 55 25.77	3.096	2 19 57.7	14.43	21 29.3
14	10 56 43.78	3.404	2 25 16.6	12.16	21 26.8
15	10 58 9.03	3.701	2 29 41.1	9.90	21 24.4
16	10 59 41.27	+3.987	+2 33 11.7	+ 7.66	21 22.1
17	11 1 20.26	4.262	2 35 48.9	5.45	21 19.9
18	11 3 5.73	4.527	2 37 33.4	3.27	21 17.8
19	11 4 57.43	4.781	2 38 26.2	+ 1.13	21 15.8
20	11 6 55.11	5.025	2 38 28.0	− 0.96	21 13.9
21	11 8 58.53	+5.260	+2 37 39.8	− 3.02	21 12.1
22	11 11 7.46	5.485	2 36 2.5	5.04	21 10.4
23	11 13 21.68	5.700	2 33 37.1	7.03	21 8.8
24	11 15 40.97	5.907	2 30 24.6	8.97	21 7.2
25	11 18 5.10	6.105	2 26 25.9	10.87	21 5.8
26	11 20 33.89	+6.295	+2 21 42.1	−12.73	21 4.4
27	11 23 7.15	6.478	2 16 14.3	14.55	21 3.1
28	11 25 44.69	6.653	2 10 3.5	16.33	21 1.8
29	11 28 26.34	6.820	2 3 10.7	18.06	21 0.6
30	11 31 11.92	6.980	1 55 36.9	19.74	20 59.5
31	11 34 1.29	+7.134	+1 47 23.1	−21.38	20 58.4
32	11 36 54.29	+7.282	+1 38 30.3	−22.99	20 57.4

Day of the Month.	3d.	8th.	13th.	18th.	23d.	28th.
	″	″	″	″	″	″
Semidiameter .	27.98	29.34	30.10	30.13	29.42	28.13
Hor. Parallax .	28.80	30.21	30.99	31.02	30.29	28.96

Day of the Month.	3d.	8th.	13th.	18th.	23d.	28th.
	″	″	″	″	″	″
Semidiameter .	26.46	24.65	22.84	21.13	19.55	18.13
Hor. Parallax .	27.26	25.38	23.52	21.75	20.13	18.68

NOTE.—The sign + indicates north declinations; the sign − indicates south declinations.

GREENWICH MEAN TIME.

NOVEMBER.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R.A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	11 36 54.29	+ 7.282	+ 1 38 30.3	− 22.99	20 57.4
2	11 39 50.76	7.424	1 28 59.5	24.55	20 56.4
3	11 42 50.57	7.560	1 18 51.7	26.07	20 55.5
4	11 45 53.59	7.691	1 8 8.0	27.55	20 54.7
5	11 48 59.72	7.818	0 56 49.4	28.98	20 53.9
6	11 52 8.84	+ 7.940	+ 0 44 56.9	− 30.38	20 53.2
7	11 55 20.82	8.057	0 32 31.4	31.74	20 52.5
8	11 58 35.56	8.170	0 19 33.9	33.05	20 51.8
9	12 1 52.96	8.280	+ 0 6 5.4	34.32	20 51.2
10	12 5 12.92	8.385	− 0 7 53.0	35.54	20 50.6
11	12 8 35.35	+ 8.486	− 0 22 20.2	− 36.72	20 50.1
12	12 12 0.17	8.583	0 37 15.2	37.86	20 49.6
13	12 15 27.28	8.677	0 52 37.0	38.95	20 49.1
14	12 18 56.60	8.767	1 8 24.5	40.00	20 48.7
15	12 22 28.04	8.853	1 24 36.6	41.00	20 48.3
16	12 26 1.54	+ 8.938	− 1 41 12.2	− 41.96	20 47.9
17	12 29 37.02	9.019	1 58 10.2	42.88	20 47.6
18	12 33 14.43	9.099	2 15 29.7	43.75	20 47.3
19	12 36 53.70	9.175	2 33 9.6	44.57	20 47.1
20	12 40 34.78	9.250	2 51 8.8	45.35	20 46.8
21	12 44 17.62	+ 9.322	− 3 9 26.3	− 46.10	20 46.6
22	12 48 2.18	9.393	3 28 1.1	46.80	20 46.5
23	12 51 48.41	9.462	3 46 52.2	47.46	20 46.3
24	12 55 36.28	9.529	4 5 58.7	48.08	20 46.2
25	12 59 25.75	9.595	4 25 19.5	48.66	20 46.1
26	13 3 16.80	+ 9.660	− 4 44 53.8	− 49.20	20 46.0
27	13 7 9.39	9.724	5 4 40.6	49.70	20 46.0
28	13 11 3.51	9.787	5 24 38.9	50.16	20 46.0
29	13 14 59.14	9.849	5 44 47.8	50.59	20 46.0
30	13 18 56.25	9.910	6 5 6.4	50.97	20 46.0
31	13 22 54.83	+ 9.971	− 6 25 33.8	− 51.31	20 46.1
32	13 26 54.87	+ 10.032	− 6 46 9.0	− 51.61	20 46.1

DECEMBER.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R.A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	13 22 54.83	+ 9.971	− 6 25 33.8	− 51.31	20 46.1
2	13 26 54.87	10.032	6 46 9.0	51.61	20 46.1
3	13 30 56.37	10.093	7 6 51.1	51.89	20 46.2
4	13 34 59.32	10.153	7 27 39.2	52.13	20 46.4
5	13 39 3.71	10.213	7 48 32.5	52.32	20 46.5
6	13 43 9.55	+ 10.273	− 8 9 30.1	− 52.47	20 46.7
7	13 47 16.81	10.333	8 30 31.1	52.59	20 46.9
8	13 51 25.51	10.392	8 51 34.5	52.68	20 47.1
9	13 55 35.64	10.452	9 12 39.4	52.72	20 47.4
10	13 59 47.19	10.511	9 33 44.8	52.73	20 47.6
11	14 4 0.17	+ 10.570	− 9 54 49.9	− 52.70	20 47.9
12	14 8 14.56	10.629	10 15 53.7	52.62	20 48.2
13	14 12 30.37	10.688	10 36 55.2	52.50	20 48.6
14	14 16 47.59	10.747	10 57 53.4	52.34	20 49.0
15	14 21 6.21	10.806	11 18 47.4	52.15	20 49.3
16	14 25 26.23	+ 10.864	− 11 39 36.3	− 51.92	20 49.7
17	14 29 47.64	10.922	12 0 19.1	51.65	20 50.2
18	14 34 10.45	10.979	12 20 54.9	51.34	20 50.7
19	14 38 34.65	11.037	12 41 22.8	50.99	20 51.1
20	14 43 0.23	11.095	13 1 41.8	50.60	20 51.6
21	14 47 27.20	+ 11.153	− 13 21 51.1	− 50.17	20 52.2
22	14 51 55.56	11.210	13 41 49.7	49.71	20 52.7
23	14 56 25.30	11.268	14 1 36.8	49.21	20 53.3
24	15 0 56.43	11.326	14 21 11.5	48.67	20 53.9
25	15 5 28.94	11.384	14 40 32.9	48.10	20 54.5
26	15 10 2.83	+ 11.441	− 14 59 40.1	− 47.50	20 55.1
27	15 14 38.10	11.499	15 18 32.3	46.85	20 55.8
28	15 19 14.75	11.556	15 37 8.7	46.17	20 56.5
29	15 23 52.78	11.613	15 55 28.4	45.46	20 57.2
30	15 28 32.18	11.670	16 13 30.5	44.71	20 57.9
31	15 33 12.96	+ 11.727	− 16 31 14.3	− 43.93	20 58.7
32	15 37 55.10	+ 11.784	− 16 48 39.0	− 43.12	20 59.5

Day of the Month.	2d.	7th.	12th.	17th.	22d.	27th.
	″	″	″	″	″	″
Semidiameter . .	16.88	15.75	14.74	13.85	13.05	12.34
Hor. Parallax . .	17.38	16.21	15.18	14.27	13.45	12.72

Day of the Month.	2d.	7th.	12th.	17th.	22d.	27th.	32d.
	″	″	″	″	″	″	″
Semidiameter .	11.71	11.14	10.62	10.15	9.72	9.34	8.98
Hor. Parallax .	12.06	11.47	10.93	10.45	10.01	9.62	9.25

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

GREENWICH MEAN TIME.

MAY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	2 54 35.69	− 4.279	+ 18 11 13.8	− 56.44	0 21.3
2	2 52 47.83	4.692	17 47 47.0	60.68	0 15.6
3	2 50 51.30	5.003	17 22 47.3	64.18	0 9.7
4	2 48 48.54	5.210	16 56 33.2	66.87	{0 3.8 / 23 57.7}
5	2 46 42.03	5.313	16 29 25.0	68.68	23 51.7
6	2 44 34.30	− 5.313	+ 16 1 43.9	− 69.60	23 45.7
7	2 42 27.80	5.212	15 33 51.5	69.61	23 39.7
8	2 40 24.89	5.016	15 6 9.6	68.72	23 33.8
9	2 38 27.79	4.729	14 38 59.6	66.97	23 28.1
10	2 36 38.53	4.362	14 12 41.6	64.40	23 22.5
11	2 34 58.93	− 3.925	+ 13 47 34.4	− 61.08	23 17.1
12	2 33 30.59	3.428	13 23 55.2	57.09	23 11.9
13	2 32 14.86	2.877	13 1 58.8	52.53	23 6.9
14	2 31 12.86	2.284	12 41 57.8	47.49	23 2.2
15	2 30 25.48	1.659	12 24 2.5	42.07	22 57.7
16	2 29 53.41	− 1.010	+ 12 8 20.8	− 36.36	22 53.5
17	2 29 37.12	− 0.345	11 54 58.8	30.44	22 49.6
18	2 29 36.91	+ 0.330	11 44 0.4	24.41	22 45.9
19	2 29 52.95	1.009	11 35 27.6	18.33	22 42.5
20	2 30 25.29	1.687	11 29 20.7	12.25	22 39.4
21	2 31 13.86	+ 2.359	+ 11 25 38.9	− 6.24	22 36.5
22	2 32 18.49	3.024	11 24 20.0	− 0.34	22 33.9
23	2 33 38.98	3.680	11 25 21.0	+ 5.40	22 31.5
24	2 35 15.09	4.325	11 28 38.0	10.98	22 29.4
25	2 37 6.52	4.957	11 34 6.5	16.36	22 27.6
26	2 39 12.96	+ 5.577	+ 11 41 41.6	+ 21.53	22 26.0
27	2 41 34.11	6.184	11 51 18.1	26.47	22 24.6
28	2 44 9.70	6.779	12 2 50.2	31.17	22 23.5
29	2 46 59.43	7.363	12 16 12.3	35.63	22 22.6
30	2 50 3.03	7.936	12 31 18.6	39.85	22 21.9
31	2 53 20.28	+ 8.500	+ 12 48 3.1	+ 43.82	22 21.5
32	2 56 50.99	+ 9.057	+ 13 6 19.8	+ 47.54	22 21.2

JUNE.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	2 56 50.99	+ 9.057	+ 13 6 19.8	+ 47.54	22 21.2
2	3 0 34.97	9.606	13 26 2.8	51.01	22 21.2
3	3 4 32.08	10.151	13 47 6.2	54.23	22 21.5
4	3 8 42.24	10.694	14 9 23.9	57.20	22 21.9
5	3 13 5.39	11.235	14 32 49.9	59.92	22 22.5
6	3 17 41.51	+ 11.775	+ 14 57 18.0	+ 62.38	22 23.4
7	3 22 30.59	12.316	15 22 41.9	64.57	22 24.5
8	3 27 32.68	12.860	15 48 55.5	66.51	22 25.8
9	3 32 47.85	13.406	16 15 52.4	68.17	22 27.3
10	3 38 16.21	13.958	16 43 25.7	69.55	22 29.0
11	3 43 57.87	+ 14.516	+ 17 11 28.5	+ 70.63	22 31.0
12	3 49 52.98	15.080	17 39 53.7	71.41	22 33.2
13	3 56 1.69	15.650	18 8 33.7	71.86	22 35.6
14	4 2 24.16	16.225	18 37 20.4	71.97	22 38.2
15	4 9 0.53	16.806	19 6 5.6	71.73	22 41.1
16	4 15 50.93	+ 17.394	+ 19 34 40.4	+ 71.10	22 44.3
17	4 22 55.46	17.984	20 2 55.3	70.07	22 47.6
18	4 30 14.16	18.574	20 30 40.4	68.62	22 51.2
19	4 37 47.02	19.163	20 57 45.3	66.72	22 55.1
20	4 45 33.93	19.745	21 23 59.0	64.34	22 59.1
21	4 53 34.68	+ 20.315	+ 21 49 9.8	+ 61.48	23 3.4
22	5 1 48.93	20.868	22 13 6.0	58.12	23 8.0
23	5 10 16.18	21.397	22 35 35.6	54.25	23 12.7
24	5 18 55.77	21.895	22 56 26.2	49.88	23 17.6
25	5 27 46.89	22.356	23 15 25.8	45.01	23 22.7
26	5 36 48.51	+ 22.769	+ 23 32 22.9	+ 39.67	23 28.0
27	5 45 59.45	23.131	23 47 6.6	33.90	23 33.4
28	5 55 18.34	23.433	23 59 27.0	27.75	23 38.9
29	6 4 43.69	23.668	24 9 15.6	21.26	23 44.4
30	6 14 13.88	23.834	24 16 25.4	14.51	23 50.0
31	6 23 47.21	+ 23.931	+ 24 20 51.0	+ 7.59	23 55.7
32	6 33 21.98	+ 23.957	+ 24 22 28.8	+ 0.57	. . . .

Day of the Month.	1st.	6th.	11th.	16th.	21st.	26th.	31st.
	″	″	″	″	″	″	″
Semidiameter.	5.72	5 99	5.93	5.61	5.15	4.66	4.19
Hor. Parallax.	15.09	15.77	15.62	14.79	13.58	12.27	11.04

Day of the Month.	5th.	10th.	15th.	20th.	25th.	30th.
	″	″	″	″	″	″
Semidiameter . .	3.76	3.39	3.08	2.84	2.65	2.55
Hor. Parallax . .	9.91	8.95	8.13	7.47	7.00	6.71

NOTE.—The sign + indicates north declinations; the sign − indicates south declinations.

GREENWICH MEAN TIME.

JULY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	Noon.	Noon.	Noon.	
	h m s	s	° ′ ″	″	h m
1	6 23 47.21	+ 23.931	+ 24 20 51.0	+ 7.59	23 55.7
2	6 33 21.98	23.957	24 22 28.8	+ 0.57	....
3	6 42 56.47	23.907	24 21 17.8	− 6.47	0 1.4
4	6 52 29.01	23.793	24 17 18.5	13.46	0 7.0
5	7 1 58.06	23.618	24 10 32.9	20.32	0 12.6
6	7 11 22.19	+ 23.385	+ 24 1 4.6	− 26.99	0 18.0
7	7 20 40.10	23.100	23 48 59.0	33.43	0 23.4
8	7 29 50.66	22.772	23 34 22.7	39.55	0 28.7
9	7 38 52.91	22.409	23 17 22.8	45.38	0 33.8
10	7 47 46.05	22.015	22 58 7.1	50.86	0 38.7
11	7 56 29.44	+ 21.598	+ 22 36 43.9	− 55.99	0 43.5
12	8 5 2.59	21.162	22 13 21.7	60.77	0 48.1
13	8 13 25.13	20.714	21 48 9.3	65.20	0 52.6
14	8 21 36.81	20.258	21 21 15.1	69.27	0 56.8
15	8 29 37.47	19.796	20 52 47.4	72.99	1 0.9
16	8 37 27.06	+ 19.335	+ 20 22 54.3	− 76.38	1 4.8
17	8 45 5.59	18.875	19 51 43.6	79.45	1 8.5
18	8 52 33.11	18.417	19 19 22.9	82.22	1 12.0
19	8 59 49.72	17.966	18 45 59.3	84.70	1 15.3
20	9 6 55.57	17.521	18 11 39.4	86.90	1 18.5
21	9 13 50.83	+ 17.084	+ 17 36 29.8	− 88.84	1 21.5
22	9 20 35.65	16.653	17 0 36.6	90.54	1 24.3
23	9 27 10.23	16.230	16 24 5.5	92.01	1 26.9
24	9 33 34.75	15.815	15 47 1.9	93.25	1 29.4
25	9 39 49.39	15.407	15 9 31.2	94.27	1 31.7
26	9 45 54.33	+ 15.007	+ 14 31 38.4	− 95.09	1 33.8
27	9 51 49.74	14.614	13 53 28.1	95.72	1 35.8
28	9 57 35.77	14.226	13 15 5.0	96.17	1 37.6
29	10 3 12.54	13.843	12 36 33.5	96.43	1 39.2
30	10 8 40.19	13.464	11 57 57.8	96.52	1 40.7
31	10 13 58.82	+ 13.089	+ 11 19 22.1	− 96.43	1 42.1
32	10 19 8.48	+ 12.716	+ 10 40 50.3	− 96.18	1 43.3

AUGUST.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	Noon.	Noon.	Noon.	
	h m s	s	° ′ ″	″	h m
1	10 19 8.48	+ 12.716	+ 10 40 50.3	− 96.18	1 43.3
2	10 24 9.24	12.346	10 2 26.6	95.77	1 44.4
3	10 29 1.12	11.976	9 24 14.8	95.19	1 45.3
4	10 33 44.12	11.606	8 46 18.8	94.45	1 46.1
5	10 38 18.21	11.234	8 8 42.6	93.54	1 46.7
6	10 42 43.32	+ 10.858	+ 7 31 30.2	− 92.47	1 47.1
7	10 46 59.37	10.477	6 54 45.5	91.23	1 47.4
8	10 51 6.22	10.091	6 18 32.6	89.81	1 47.6
9	10 55 3.70	9.698	5 42 55.8	88.21	1 47.6
10	10 58 51.61	9.294	5 7 59.6	86.44	1 47.4
11	11 2 29.71	+ 8.879	+ 4 33 48.4	− 84.46	1 47.1
12	11 5 57.69	8.451	4 0 27.2	82.27	1 46.6
13	11 9 15.23	8.008	3 28 1.1	79.87	1 46.0
14	11 12 21.95	7.549	2 56 35.4	77.24	1 45.1
15	11 15 17.43	7.071	2 26 15.7	74.35	1 44.1
16	11 18 1.18	+ 6.571	+ 1 57 8.3	− 71.21	1 42.9
17	11 20 32.67	6.049	1 29 19.7	67.79	1 41.5
18	11 22 51.32	5.501	1 2 56.8	64.07	1 39.8
19	11 24 56.51	4.926	0 38 7.2	60.02	1 37.9
20	11 26 47.55	4.322	+ 0 14 59.0	55.62	1 35.8
21	11 28 23.73	+ 3.687	− 0 6 19.1	− 50.84	1 33.5
22	11 29 44.28	3.020	0 25 38.0	45.67	1 30.9
23	11 30 48.43	2.320	0 42 48.0	40.09	1 28.0
24	11 31 35.38	1.587	0 57 38.6	34.05	1 24.8
25	11 32 4.35	0.822	1 9 58.8	27.55	1 21.3
26	11 32 14.58	+ 0.025	− 1 19 37.7	− 20.60	1 17.6
27	11 32 5.37	− 0.798	1 26 23.9	13.17	1 13.5
28	11 31 36.15	1.641	1 30 6.0	− 5.27	1 9.0
29	11 30 46.52	2.498	1 30 33.2	+ 3.07	1 4.2
30	11 29 36.23	3.360	1 27 35.5	11.80	0 59.1
31	11 28 5.31	− 4.214	− 1 21 4.5	+ 20.84	0 53.7
32	11 26 14.14	− 5.044	− 1 10 53.8	+ 30.09	0 47.9

Day of the Month.	5th.	10th.	15th.	20th.	25th.	30th.
	″	″	″	″	″	″
Semidiameter . .	2.51	2.54	2.61	2.72	2.87	3.04
Hor. Parallax . .	6.62	6.69	6.88	7.18	7.56	8.02

Day of the Month.	4th.	9th.	14th.	19th.	24th.	29th.
	″	″	″	″	″	″
Semidiameter . .	3.25	3.49	3.78	4.12	4.50	4.89
Hor. Parallax . .	8.56	9.20	9.96	10.85	11.85	12.89

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

GREENWICH MEAN TIME.

MAY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	22 33 46.34	+7.084	−10 45 21.2	+39.59	19 59.7
2	22 36 36.20	7.070	10 29 28.7	39.79	19 58.5
3	22 39 25.72	7.056	10 13 31.6	39.97	19 57.4
4	22 42 14.91	7.043	9 57 30.1	40.15	19 56.3
5	22 45 3.77	7.029	9 41 24.3	40.33	19 55.2
6	22 47 52.32	+7.015	− 9 25 14.3	+40.50	19 54.0
7	22 50 40.56	7.003	9 9 0.4	40.66	19 52.9
8	22 53 28.49	6.990	8 52 42.8	40.81	19 51.7
9	22 56 16.12	6.978	8 36 21.5	40.96	19 50.6
10	22 59 3.45	6.966	8 19 56.7	41.11	19 49.5
11	23 1 50.49	+6.954	− 8 3 28.5	+41.24	19 48.3
12	23 4 37.26	6.942	7 46 57.2	41.37	19 47.1
13	23 7 23.74	6.931	7 30 22.9	41.49	19 45.9
14	23 10 9.94	6.919	7 13 45.9	41.60	19 44.8
15	23 12 55.87	6.908	6 57 6.2	41.71	19 43.6
16	23 15 41.53	+6.897	− 6 40 24.0	+41.81	19 42.4
17	23 18 26.93	6.886	6 23 39.5	41.90	19 41.2
18	23 21 12.07	6.875	6 6 52.9	41.98	19 40.0
19	23 23 56.94	6.864	5 50 4.4	42.06	19 38.8
20	23 26 41.57	6.854	5 33 14.2	42.13	19 37.6
21	23 29 25.94	+6.843	− 5 16 22.4	+42.19	19 36.4
22	23 32 10.05	6.832	4 59 29.3	42.24	19 35.2
23	23 34 53.92	6.822	4 42 35.0	42.28	19 34.0
24	23 37 37.53	6.811	4 25 39.7	42.32	19 32.8
25	23 40 20.88	6.801	4 8 43.7	42.35	19 31.5
26	23 43 3.98	+6.790	− 3 51 47.2	+42.37	19 30.3
27	23 45 46.84	6.780	3 34 50.3	42.38	19 29.1
28	23 48 29.44	6.769	3 17 53.2	42.38	19 27.9
29	23 51 11.79	6.759	3 0 56.1	42.37	19 26.6
30	23 53 53.89	6.749	2 43 59.3	42.36	19 25.4
31	23 56 35.74	+6.739	− 2 27 2.9	+42.34	19 24.1
32	23 59 17.35	+6.729	− 2 10 7.1	+42.31	19 22.9

Day of the Month.	5th.	10th.	15th.	20th.	25th.	30th.
	″	″	″	″	″	″
Semidiameter . .	3.38	3.45	3.52	3.59	3.67	3.75
Hor. Parallax . .	5.88	6.00	6.12	6.25	6.39	6.53

JUNE.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	23 59 17.35	+6.729	−2 10 7.1	+42.31	19 22.9
2	0 1 58.73	6.719	1 53 12.0	42.28	19 21.6
3	0 4 39.87	6.710	1 36 17.8	42.24	19 20.4
4	0 7 20.79	6.700	1 19 24.6	42.19	19 19.1
5	0 10 1.49	6.691	1 2 32.6	42.14	19 17.8
6	0 12 41.97	+6.682	−0 45 41.9	+42.08	19 16.6
7	0 15 22.24	6.673	0 28 52.6	42.02	19 15.3
8	0 18 2.30	6.664	−0 12 5.0	41.95	19 14.0
9	0 20 42.15	6.656	+0 4 40.8	41.87	19 12.7
10	0 23 21.81	6.648	0 21 24.7	41.79	19 11.4
11	0 26 1.26	+6.640	+0 38 6.6	+41.70	19 10.2
12	0 28 40.52	6.632	0 54 46.2	41.60	19 8.9
13	0 31 19.59	6.624	1 11 23.4	41.50	19 7.6
14	0 33 58.47	6.615	1 27 58.1	41.39	19 6.3
15	0 36 37.15	6.607	1 44 30.0	41.27	19 5.0
16	0 39 15.64	+6.599	+2 0 59.1	+41.15	19 3.7
17	0 41 53.94	6.591	2 17 25.2	41.02	19 2.4
18	0 44 32.04	6.583	2 33 48.0	40.88	19 1.1
19	0 47 9.94	6.575	2 50 7.5	40.74	18 59.8
20	0 49 47.65	6.567	3 6 23.4	40.58	18 58.4
21	0 52 25.16	+6.558	+3 22 35.6	+40.42	18 57.1
22	0 55 2.46	6.549	3 38 43.8	40.26	18 55.8
23	0 57 39.55	6.541	3 54 47.9	40.08	18 54.5
24	1 0 16.42	6.532	4 10 47.7	39.90	18 53.1
25	1 2 53.06	6.522	4 26 43.1	39.71	18 51.8
26	1 5 29.48	+6.513	+4 42 33.8	+39.51	18 50.5
27	1 8 5.68	6.503	4 58 19.7	39.31	18 49.1
28	1 10 41.64	6.493	5 14 0.7	39.10	18 47.8
29	1 13 17.37	6.483	5 29 36.7	38.89	18 46.4
30	1 15 52.86	6.473	5 45 7.4	38.67	18 45.1
31	1 18 28.11	+6.464	+6 0 32.7	+38.45	18 43.7
32	1 21 3.12	+6.454	+6 15 52.6	+38.22	18 42.4

Day of the Month.	4th.	9th.	14th.	19th.	24th.	29th.
	″	″	″	″	″	″
Semidiameter . .	3.83	3.92	4.01	4.10	4.19	4.29
Hor. Parallax . .	6.67	6.82	6.98	7.13	7.29	7.46

NOTE.—The sign + indicates north declinations; the sign − indicates south declinations.

GREENWICH MEAN TIME.

JULY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	1 18 28.11	+6.464	+6 0 32.7	+38.45	18 43.7
2	1 21 3.12	6.454	6 15 52.6	38.22	18 42.4
3	1 23 37.89	6.444	6 31 7.0	37.98	18 41.0
4	1 26 12.43	6.434	6 46 15.7	37.74	18 39.6
5	1 28 46.72	6.423	7 1 18.6	37.50	18 38.3
6	1 31 20.77	+6.413	+7 16 15.7	+37.25	18 36.9
7	1 33 54.58	6.403	7 31 6.8	37.00	18 35.5
8	1 36 28.13	6.393	7 45 51.7	36.74	18 34.1
9	1 39 1.44	6.382	8 0 30.4	36.48	18 32.7
10	1 41 34.49	6.372	8 15 2.8	36.22	18 31.3
11	1 44 7.27	+6.361	+8 29 28.8	+35.95	18 29.9
12	1 46 39.79	6.349	8 43 48.2	35.67	18 28.5
13	1 49 12.03	6.337	8 58 1.0	35.39	18 27.1
14	1 51 43.99	6.325	9 12 7.0	35.11	18 25.7
15	1 54 15.66	6.313	9 26 6.2	34.82	18 24.3
16	1 56 47.04	+6.300	+9 39 58.3	+34.52	18 22.9
17	1 59 18.11	6.287	9 53 43.3	34.22	18 21.4
18	2 1 48.85	6.274	10 7 21.0	33.92	18 20.0
19	2 4 19.26	6.260	10 20 51.3	33.61	18 18.6
20	2 6 49.32	6.244	10 34 14.1	33.29	18 17.1
21	2 9 19.02	+6.229	+10 47 29.3	+32.97	18 15.7
22	2 11 48.34	6.213	11 0 36.8	32.65	18 14.2
23	2 14 17.26	6.196	11 13 36.4	32.32	18 12.8
24	2 16 45.77	6.179	11 26 28.0	31.98	18 11.3
25	2 19 13.86	6.161	11 39 11.4	31.64	18 9.8
26	2 21 41.50	+6.142	+11 51 46.7	+31.29	18 8.3
27	2 24 8.69	6.122	12 4 13.7	30.95	18 6.8
28	2 26 35.42	6.103	12 16 32.4	30.60	18 5.3
29	2 29 1.66	6.083	12 28 42.8	30.25	18 3.8
30	2 31 27.41	6.062	12 40 44.8	29.90	18 2.3
31	2 33 52.65	+6.040	+12 52 38.4	+29.55	18 0.8
32	2 36 17.37	+6.019	+13 4 23.5	+29.20	17 59.2

AUGUST.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	2 36 17.37	+6.019	+13 4 23.5	+29.20	17 59.2
2	2 38 41.56	5.996	13 16 0.0	28.84	17 57.7
3	2 41 5.21	5.973	13 27 28.0	28.48	17 56.2
4	2 43 28.31	5.950	13 38 47.4	28.13	17 54.6
5	2 45 50.84	5.926	13 49 58.3	27.77	17 53.0
6	2 48 12.78	+5.901	+14 1 0.5	+27.41	17 51.4
7	2 50 34.11	5.876	14 11 54.1	27.05	17 49.8
8	2 52 54.82	5.849	14 22 39.0	26.69	17 48.2
9	2 55 14.89	5.822	14 33 15.3	26.33	17 46.6
10	2 57 34.30	5.794	14 43 42.8	25.96	17 45.0
11	2 59 53.03	+5.765	+14 54 1.5	+25.59	17 43.4
12	3 2 11.06	5.736	15 4 11.5	25.23	17 41.7
13	3 4 28.36	5.704	15 14 12.6	24.86	17 40.1
14	3 6 44.91	5.673	15 24 5.0	24.50	17 38.4
15	3 9 0.68	5.640	15 33 48.5	24.13	17 36.7
16	3 11 15.64	+5.605	+15 43 23.1	+23.75	17 35.0
17	3 13 29.77	5.570	15 52 48.8	23.38	17 33.3
18	3 15 43.03	5.533	16 2 5.6	23.01	17 31.5
19	3 17 55.39	5.494	16 11 13.5	22.64	17 29.8
20	3 20 6.81	5.455	16 20 12.4	22.26	17 28.0
21	3 22 17.26	+5.414	+16 29 2.2	+21.89	17 26.2
22	3 24 26.71	5.371	16 37 43.0	21.51	17 24.4
23	3 26 35.13	5.328	16 46 14.9	21.14	17 22.6
24	3 28 42.47	5.283	16 54 37.9	20.77	17 20.8
25	3 30 48.72	5.237	17 2 52.0	20.40	17 18.9
26	3 32 53.83	+5.189	+17 10 57.2	+20.03	17 17.0
27	3 34 57.78	5.140	17 18 53.7	19.67	17 15.1
28	3 37 0.55	5.089	17 26 41.5	19.31	17 13.2
29	3 39 2.09	5.038	17 34 20.7	18.96	17 11.2
30	3 41 2.38	4.985	17 41 51.4	18.60	17 9.2
31	3 43 1.39	+4.930	+17 49 13.6	+18.25	17 7.3
32	3 44 59.08	+4.875	+17 56 27.5	+17.90	17 5.3

Day of the Month.	4th.	9th.	14th.	19th.	24th.	29th.
	″	″	″	″	″	″
Semidiameter .	4.39	4.50	4.61	4.73	4.86	4.99
Hor. Parallax .	7.64	7.83	8.02	8.23	8.46	8.68

Day of the Month.	3d.	8th.	13th.	18th.	23d.	28th.
	″	″	″	″	″	″
Semidiameter .	5.13	5.28	5.43	5.60	5.78	5.97
Hor. Parallax .	8.93	9.19	9.45	9.74	10.06	10.39

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

GREENWICH MEAN TIME.

SEPTEMBER.

Day of Month	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	3 44 59.08	+4.875	+17 56 27.5	+17.90	17 5.3
2	3 46 55.42	4.818	18 3 33.2	17.56	17 3.3
3	3 48 50.38	4.760	18 10 30.6	17.22	17 1.3
4	3 50 43.92	4.700	18 17 19.9	16.89	16 59.3
5	3 52 36.00	4.638	18 24 1.2	16.56	16 57.3
6	3 54 26.59	+4.576	+18 30 34.6	+16.23	16 55.2
7	3 56 15.64	4.511	18 37 0.2	15.90	16 53.0
8	3 58 3.12	4.444	18 43 18.1	15.58	16 50.8
9	3 59 48.98	4.375	18 49 28.3	15.26	16 48.6
10	4 1 33.17	4.305	18 55 30.9	14.95	16 46.4
11	4 3 15.66	+4.233	+19 1 26.1	+14.64	16 44.1
12	4 4 56.38	4.158	19 7 13.8	14.33	16 41.8
13	4 6 35.28	4.082	19 12 54.2	14.03	16 39.5
14	4 8 12.31	4.002	19 18 27.3	13.73	16 37.2
15	4 9 47.42	3.920	19 23 53.3	13.43	16 34.8
16	4 11 20.55	+3.837	+19 29 12.2	+13.14	16 32.4
17	4 12 51.63	3.751	19 34 24.0	12.85	16 30.0
18	4 14 20.60	3.662	19 39 28.9	12.56	16 27.5
19	4 15 47.42	3.570	19 44 27.0	12.28	16 25.0
20	4 17 12.01	3.477	19 49 18.5	12.01	16 22.4
21	4 18 34.33	+3.381	+19 54 3.4	+11.74	16 19.8
22	4 19 54.32	3.283	19 58 41.9	11.47	16 17.2
23	4 21 11.92	3.182	20 3 14.0	11.21	16 14.5
24	4 22 27.08	3.079	20 7 40.0	10.95	16 11.8
25	4 23 39.74	2.974	20 12 0.0	10.70	16 9.0
26	4 24 49.86	+2.866	+20 16 14.1	+10.46	16 6.2
27	4 25 57.37	2.757	20 20 22.5	10.23	16 3.4
28	4 27 2.22	2.645	20 24 25.3	10.00	16 0.5
29	4 28 4.37	2.531	20 28 22.6	9.78	15 57.6
30	4 29 3.76	2.415	20 32 14.6	9.56	15 54.6
31	4 30 0.33	+2.297	+20 36 1.4	+9.34	15 51.6
32	4 30 54.03	+2.176	+20 39 43.0	+9.13	15 48.5

OCTOBER.

Day of Month	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	4 30 0.33	+2.297	+20 36 1.4	+9.34	15 51.6
2	4 30 54.03	2.176	20 39 43.0	9.13	15 48.5
3	4 31 44.80	2.053	20 43 19.6	8.92	15 45.4
4	4 32 32.59	1.927	20 46 51.4	8.72	15 42.2
5	4 33 17.34	1.800	20 50 18.4	8.52	15 39.0
6	4 33 58.99	+1.669	+20 53 40.6	+8.32	15 35.7
7	4 34 37.50	1.537	20 56 58.0	8.13	15 32.4
8	4 35 12.79	1.402	21 0 10.8	7.94	15 29.0
9	4 35 44.81	1.264	21 3 19.1	7.75	15 25.6
10	4 36 13.50	1.124	21 6 22.8	7.56	15 22.1
11	4 36 38.79	+0.980	+21 9 21.9	+7.37	15 18.5
12	4 37 0.62	0.835	21 12 16.3	7.17	15 14.9
13	4 37 18.93	0.687	21 15 6.2	6.98	15 11.2
14	4 37 33.66	0.537	21 17 51.5	6.79	15 7.5
15	4 37 44.76	0.385	21 20 32.1	6.59	15 3.7
16	4 37 52.18	+0.231	+21 23 8.0	+6.39	14 59.9
17	4 37 55.86	+0.074	21 25 39.1	6.19	14 56.0
18	4 37 55.77	−0.084	21 28 5.4	5.99	14 52.0
19	4 37 51.87	0.243	21 30 26.8	5.79	14 48.0
20	4 37 44.12	0.403	21 32 43.3	5.58	14 43.9
21	4 37 32.52	−0.564	+21 34 54.7	+5.37	14 39.7
22	4 37 17.06	0.725	21 37 1.0	5.16	14 35.5
23	4 36 57.73	0.886	21 39 2.1	4.94	14 31.2
24	4 36 34.52	1.048	21 40 58.0	4.71	14 26.9
25	4 36 7.45	1.208	21 42 48.5	4.48	14 22.5
26	4 35 36.54	−1.368	+21 44 33.4	+4.25	14 18.0
27	4 35 1.81	1.527	21 46 12.6	4.01	14 13.4
28	4 34 23.28	1.684	21 47 46.0	3.77	14 8.8
29	4 33 41.00	1.839	21 49 13.4	3.52	14 4.1
30	4 32 55.02	1.992	21 50 34.7	3.25	13 59.4
31	4 32 5.40	−2.142	+21 51 49.6	+2.98	13 54.6
32	4 31 12.19	−2.290	+21 52 57.9	+2.71	13 49.8

Day of the Month.	2d.	7th.	12th.	17th.	22d.	27th.
	″	″	″	″	″	″
Semidiameter . .	6.17	6.39	6.62	6.87	7.13	7.41
Hor. Parallax . .	10.74	11.12	11.52	11.95	12.41	12.89

Day of the Month.	2d.	7th.	12th.	17th.	22d.	27th.
	″	″	″	″	″	″
Semidiameter . .	7.70	8.01	8.32	8.63	8.94	9.23
Hor. Parallax . .	13.40	13.94	14.48	15.02	15.56	16.06

NOTE.—The sign + indicates north declinations; the sign − indicates south declinations.

GREENWICH MEAN TIME.

NOVEMBER.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	4 31 12.19	−2.290	+21 52 57.9	+2.71	13 49.8
2	4 30 15.48	2.435	21 53 59.6	2.42	13 44.9
3	4 29 15.33	2.576	21 54 54.3	2.13	13 39.9
4	4 28 11.85	2.713	21 55 41.9	1.83	13 34.9
5	4 27 5.14	2.846	21 56 22.3	1.52	13 29.8
6	4 25 55.29	−2.975	+21 56 55.2	+1.21	13 24.7
7	4 24 42.41	3.099	21 57 20.4	0.89	13 19.6
8	4 23 26.63	3.217	21 57 37.8	0.56	13 14.4
9	4 22 8.08	3.329	21 57 47.3	+0.22	13 9.1
10	4 20 46.89	3.436	21 57 48.5	−0.12	13 3.7
11	4 19 23.21	−3.537	+21 57 41.5	−0.47	12 58.4
12	4 17 57.20	3.630	21 57 26.3	0.81	12 53.1
13	4 16 29.04	3.716	21 57 2.8	1.15	12 47.6
14	4 14 58.92	3.793	21 56 31.0	1.50	12 42.2
15	4 13 27.03	3.863	21 55 51.0	1.84	12 36.7
16	4 11 53.57	−3.924	+21 55 2.9	−2.17	12 31.2
17	4 10 18.76	3.976	21 54 6.9	2.50	12 25.8
18	4 8 42.83	4.018	21 53 3.2	2.81	12 20.3
19	4 7 5.99	4.050	21 51 52.0	3.12	12 14.7
20	4 5 28.48	4.074	21 50 33.7	3.41	12 9.2
21	4 3 50.54	−4.087	+21 49 8.7	−3.68	12 3.6
22	4 2 12.41	4.090	21 47 37.3	3.93	11 58.0
23	4 0 34.31	4.083	21 46 0.1	4.17	11 52.4
24	3 58 56.48	4.067	21 44 17.4	4.39	11 46.9
25	3 57 19.15	4.042	21 42 29.7	4.59	11 41.4
26	3 55 42.55	−4.007	+21 40 37.6	−4.76	11 35.9
27	3 54 6.89	3.963	21 38 41.6	4.91	11 30.3
28	3 52 32.39	3.910	21 36 42.4	5.03	11 24.8
29	3 50 59.26	3.849	21 34 40.4	5.13	11 19.4
30	3 49 27.70	3.780	21 32 36.4	5.20	11 13.9
31	3 47 57.88	−3.703	+21 30 30.9	−5.25	11 8.5
32	3 46 29.98	−3.620	+21 28 24.7	−5.28	11 3.1

Day of the Month.	1st.	6th.	11th.	16th.	21st.	26th.
	″	″	″	″	″	″
Semidiameter . .	9.48	9.68	9.82	9.88	9.86	9.73
Hor. Parallax . .	16.50	16.84	17.09	17.19	17.16	16.93

DECEMBER.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	3 47 57.88	−3.703	+21 30 30.9	−5.25	11 8.5
2	3 46 29.98	3.620	21 28 24.7	5.28	11 3.1
3	3 45 4.18	3.530	21 26 18.2	5.27	10 57.8
4	3 43 40.62	3.433	21 24 12.1	5.24	10 52.5
5	3 42 19.44	3.331	21 22 6.9	5.19	10 47.3
6	3 41 0.77	−3.283	+21 20 3.2	−5.12	10 42.1
7	3 39 44.74	3.111	21 18 1.6	5.02	10 36.9
8	3 38 31.46	2.994	21 16 2.6	4.90	10 31.8
9	3 37 21.04	2.873	21 14 6.9	4.75	10 26.7
10	3 36 13.56	2.749	21 12 14.8	4.59	10 21.7
11	3 35 9.11	−2.620	+21 10 27.0	−4.40	10 16.7
12	3 34 7.78	2.489	21 8 44.0	4.19	10 11.8
13	3 33 9.66	2.354	21 7 6.3	3.96	10 6.9
14	3 32 14.81	2.216	21 5 34.4	3.71	10 2.1
15	3 31 23.28	2.076	21 4 8.7	3.44	9 57.3
16	3 30 35.14	−1.934	+21 2 49.7	−3.14	9 52.6
17	3 29 50.42	1.791	21 1 37.9	2.84	9 47.9
18	3 29 9.16	1.646	21 0 33.5	2.53	9 43.3
19	3 28 31.39	1.500	20 59 36.8	2.20	9 38.8
20	3 27 57.14	1.354	20 58 48.2	1.85	9 34.3
21	3 27 26.40	−1.207	+20 58 8.0	−1.49	9 29.9
22	3 26 59.18	1.060	20 57 36.6	1.12	9 25.6
23	3 26 35.48	0.914	20 57 14.0	0.76	9 21.3
24	3 26 15.30	0.768	20 57 0.1	0.39	9 17.1
25	3 25 58.62	0.622	20 56 55.2	−0.02	9 12.9
26	3 25 45.41	−0.478	+20 56 59.5	+0.37	9 8.8
27	3 25 35.64	0.335	20 57 13.0	0.76	9 4.7
28	3 25 29.29	0.194	20 57 35.7	1.14	9 0.7
29	3 25 26.31	−0.054	20 58 7.6	1.52	8 56.7
30	3 25 26.67	+0.084	20 58 48.7	1.90	8 52.8
31	3 25 30.32	+0.220	+20 59 38.8	+2.27	8 48.9
32	3 25 37.21	+0.354	+21 0 37.8	+2.64	8 45.1

Day of the Month.	1st.	6th.	11th.	16th.	21st.	26th.	31st.
	″	″	″	″	″	″	″
Semidiameter .	9.53	9.25	8.92	8.54	8.15	7.75	7.35
Hor. Parallax .	16.58	16.10	15.52	14.86	14.18	13.49	12.79

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

GREENWICH MEAN TIME.

JANUARY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	14 30 16.39	+1.515	−13 37 13.4	−7.01	19 47.4
2	14 30 52.54	1.497	13 40 0.2	6.90	19 44.1
3	14 31 28.26	1.479	13 42 44.4	6.79	19 40.8
4	14 32 3.55	1.461	13 45 26.0	6.68	19 37.4
5	14 32 38.40	1.443	13 48 5.0	6.57	19 34.1
6	14 33 12.80	+1.424	−13 50 41.3	−6.46	19 30.7
7	14 33 46.76	1.405	13 53 14.9	6.35	19 27.4
8	14 34 20.25	1.386	13 55 45.8	6.23	19 24.0
9	14 34 53.27	1.366	13 58 14.1	6.12	19 20.6
10	14 35 25.82	1.346	14 0 39.6	6.01	19 17.2
11	14 35 57.89	+1.326	−14 3 2.4	−5.89	19 13.8
12	14 36 29.47	1.306	14 5 22.5	5.78	19 10.3
13	14 37 0.56	1.285	14 7 39.8	5.66	19 6.9
14	14 37 31.15	1.264	14 9 54.3	5.55	19 3.5
15	14 38 1.23	1.243	14 12 6.0	5.43	19 0.0
16	14 38 30.80	+1.221	−14 14 14.9	−5.31	18 56.6
17	14 38 59.84	1.199	14 16 21.0	5.19	18 53.1
18	14 39 28.36	1.177	14 18 24.2	5.07	18 49.7
19	14 39 56.34	1.154	14 20 24.5	4.95	18 46.2
20	14 40 23.77	1.131	14 22 22.0	4.83	18 42.7
21	14 40 50.65	+1.108	−14 24 16.6	−4.71	18 39.2
22	14 41 16.96	1.085	14 26 8.2	4.59	18 35.7
23	14 41 42.71	1.061	14 27 56.9	4.47	18 32.2
24	14 42 7.88	1.037	14 29 42.6	4.34	18 28.7
25	14 42 32.47	1.012	14 31 25.3	4.22	18 25.1
26	14 42 56.46	+0.987	−14 33 5.0	−4.09	18 21.6
27	14 43 19.85	0.962	14 34 41.7	3.96	18 18.0
28	14 43 42.64	0.936	14 36 15.3	3.84	18 14.5
29	14 44 4.81	0.910	14 37 45.9	3.71	18 10.9
30	14 44 26.35	0.884	14 39 13.3	3.58	18 7.3
31	14 44 47.27	+0.858	−14 40 37.7	−3.45	18 3.7
32	14 45 7.55	+0.831	−14 41 59.0	−3.32	18 0.1

Day of the Month.	1st.	9th.	17th.	25th.
	″	″	″	″
Semidiameter	16.07	16.40	16.75	17.14
Horizontal Parallax	1.50	1.54	1.57	1.60

FEBRUARY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	14 45 7.55	+0.831	−14 41 59.0	−3.32	18 0.1
2	14 45 27.19	0.804	14 43 17.1	3.19	17 56.5
3	14 45 46.18	0.777	14 44 32.1	3.06	17 52.9
4	14 46 4.52	0.750	14 45 43.9	2.93	17 49.2
5	14 46 22.19	0.723	14 46 52.6	2.80	17 45.6
6	14 46 39.20	+0.695	−14 47 58.1	−2.66	17 42.0
7	14 46 55.54	0.667	14 49 0.5	2.53	17 38.3
8	14 47 11.21	0.639	14 49 59.6	2.40	17 34.6
9	14 47 26.20	0.611	14 50 55.6	2.27	17 30.9
10	14 47 40.50	0.582	14 51 48.4	2.13	17 27.2
11	14 47 54.12	+0.553	−14 52 38.1	−2.00	17 23.5
12	14 48 7.04	0.524	14 53 24.5	1.87	17 19.8
13	14 48 19.26	0.495	14 54 7.7	1.74	17 16.0
14	14 48 30.78	0.465	14 54 47.7	1.60	17 12.3
15	14 48 41.60	0.436	14 55 24.5	1.47	17 8.5
16	14 48 51.71	+0.406	−14 55 58.0	−1.33	17 4.7
17	14 49 1.09	0.376	14 56 28.3	1.20	17 0.9
18	14 49 9.76	0.346	14 56 55.4	1.06	16 57.1
19	14 49 17.70	0.316	14 57 19.2	0.93	16 53.3
20	14 49 24.91	0.285	14 57 39.7	0.79	16 49.5
21	14 49 31.39	+0.255	−14 57 56.9	−0.65	16 45.7
22	14 49 37.13	0.224	14 58 10.9	0.51	16 41.8
23	14 49 42.13	0.193	14 58 21.5	0.38	16 38.0
24	14 49 46.38	0.162	14 58 28.8	0.24	16 34.1
25	14 49 49.88	0.131	14 58 32.9	−0.10	16 30.2
26	14 49 52.64	+0.100	−14 58 33.6	+0.04	16 26.3
27	14 49 54.65	0.069	14 58 31.0	0.17	16 22.4
28	14 49 55.91	0.037	14 58 25.1	0.31	16 18.5
29	14 49 56.41	+0.006	14 58 15.9	0.45	16 14.6
30	14 49 56.16	−0.026	14 58 3.4	0.59	16 10.6
31	14 49 55.16	−0.058	−14 57 47.7	+0.72	16 6.7
32	14 49 53.41	−0.089	−14 57 28.6	+0.86	16 2.7

Day of the Month.	2d.	10th.	18th.	26th.
	″	″	″	″
Semidiameter	17.56	17.99	18.44	18.90
Horizontal Parallax	1.64	1.68	1.72	1.77

NOTE.—The sign + indicates north declinations; the sign − indicates south declinations.

GREENWICH MEAN TIME.

MARCH.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	14 49 56.41	+0.006	−14 58 15.9	+0.45	16 14.6
2	14 49 56.16	−0.026	14 58 3.4	0.59	16 10.6
3	14 49 55.16	0.058	14 57 47.7	0.72	16 6.7
4	14 49 53.41	0.089	14 57 28.6	0.86	16 2.7
5	14 49 50.91	0.120	14 57 6.3	1.00	15 58.7
6	14 49 47.66	−0.151	−14 56 40.8	+1.13	15 54.7
7	14 49 43.67	0.182	14 56 12.0	1.27	15 50.7
8	14 49 38.94	0.213	14 55 40.0	1.40	15 46.7
9	14 49 33.47	0.244	14 55 4.8	1.53	15 42.7
10	14 49 27.26	0.274	14 54 26.4	1.66	15 38.6
11	14 49 20.32	−0.305	−14 53 44.9	+1.79	15 34.6
12	14 49 12.65	0.335	14 53 0.3	1.92	15 30.5
13	14 49 4.26	0.365	14 52 12.5	2.05	15 26.4
14	14 48 55.15	0.395	14 51 21.6	2.18	15 22.3
15	14 48 45.32	0.425	14 50 27.7	2.31	15 18.2
16	14 48 34.79	−0.454	−14 49 30.7	+2.44	15 14.1
17	14 48 23.55	0.483	14 48 30.6	2.57	15 10.0
18	14 48 11.61	0.512	14 47 27.5	2.69	15 5.9
19	14 47 58.98	0.541	14 46 21.4	2.82	15 1.7
20	14 47 45.66	0.569	14 45 12.4	2.94	14 57.6
21	14 47 31.65	−0.597	−14 44 0.3	+3.06	14 53.4
22	14 47 16.97	0.625	14 42 45.4	3.18	14 49.2
23	14 47 1.62	0.653	14 41 27.6	3.30	14 45.0
24	14 46 45.62	0.680	14 40 6.9	3.42	14 40.8
25	14 46 28.97	0.707	14 38 43.4	3.54	14 36.6
26	14 46 11.67	−0.733	−14 37 17.2	+3.65	14 32.4
27	14 45 53.74	0.759	14 35 48.2	3.77	14 28.1
28	14 45 35.20	0.785	14 34 16.5	3.88	14 23.9
29	14 45 16.05	0.810	14 32 42.1	3.99	14 19.6
30	14 44 56.30	0.835	14 31 5.2	4.09	14 15.4
31	14 44 35.97	−0.859	−14 29 25.7	+4.20	14 11.1
32	14 44 15.08	−0.882	−14 27 43.7	+4.30	14 6.8

Day of the Month.	6th.	14th.	22d.	30th.
	″	″	″	″
Semidiameter	19.35	19.79	20.19	20.56
Horizontal Parallax . .	1.81	1.85	1.89	1.92

APRIL.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	14 44 15.08	−0.882	−14 27 43.7	+4.30	14 6.8
2	14 43 53.64	0.905	14 25 59.3	4.40	14 2.5
3	14 43 31.65	0.927	14 24 12.6	4.49	13 58.2
4	14 43 9.14	0.948	14 22 23.6	4.59	13 53.9
5	14 42 46.13	0.969	14 20 32.4	4.68	13 49.6
6	14 42 22.63	−0.989	−14 18 39.1	+4.77	13 45.3
7	14 41 58.65	1.008	14 16 43.7	4.85	13 41.0
8	14 41 34.21	1.027	14 14 46.2	4.93	13 36.6
9	14 41 9.33	1.045	14 12 46.9	5.01	13 32.3
10	14 40 44.03	1.063	14 10 45.7	5.09	13 28.0
11	14 40 18.32	−1.080	−14 8 42.7	+5.16	13 23.6
12	14 39 52.21	1.096	14 6 38.0	5.23	13 19.3
13	14 39 25.73	1.111	14 4 31.6	5.30	13 14.9
14	14 38 58.89	1.125	14 2 23.7	5.36	13 10.5
15	14 38 31.71	1.139	14 0 14.2	5.42	13 6.1
16	14 38 4.21	−1.152	−13 58 3.3	+5.48	13 1.7
17	14 37 36.41	1.164	13 55 51.1	5.53	12 57.3
18	14 37 8.31	1.176	13 53 37.6	5.58	12 52.9
19	14 36 39.95	1.187	13 51 23.0	5.63	12 48.5
20	14 36 11.34	1.197	13 49 7.2	5.67	12 44.1
21	14 35 42.51	−1.206	−13 46 50.5	+5.71	12 39.6
22	14 35 13.46	1.214	13 44 32.8	5.75	12 35.2
23	14 34 44.23	1.222	13 42 14.3	5.78	12 30.8
24	14 34 14.83	1.228	13 39 55.1	5.81	12 26.4
25	14 33 45.28	1.234	13 37 35.3	5.84	12 22.0
26	14 33 15.60	−1.239	−13 35 14.9	+5.86	12 17.5
27	14 32 45.82	1.243	13 32 54.1	5.87	12 13.1
28	14 32 15.95	1.246	13 30 33.0	5.88	12 8.7
29	14 31 46.03	1.248	13 28 11.7	5.89	12 4.3
30	14 31 16.07	1.249	13 25 50.2	5.89	11 59.9
31	14 30 46.09	−1.249	−13 23 28.8	+5.89	11 55.4
32	14 30 16.12	−1.248	−13 21 7.5	+5.88	11 51.0

Day of the Month.	7th.	15th.	23d.
	″	″	″
Semidiameter	20.86	21.11	21.25
Horizontal Parallax	1.95	1.97	1.99

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

GREENWICH MEAN TIME.

MAY.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	14 30 46.09	−1.249	−13 23 28.8	+5.89	11 55.4
2	14 30 16.12	1.248	13 21 7.5	5.88	11 51.0
3	14 29 46.18	1.246	13 18 46.5	5.87	11 46.6
4	14 29 16.29	1.244	13 16 25.7	5.85	11 42.1
5	14 28 46.47	1.241	13 14 5.4	5.83	11 37.7
6	14 28 16.74	−1.236	−13 11 45.6	+5.81	11 33.3
7	14 27 47.12	1.231	13 9 26.5	5.78	11 28.8
8	14 27 17.63	1.225	13 7 8.1	5.75	11 24.4
9	14 26 48.29	1.219	13 4 50.5	5.71	11 20.0
10	14 26 19.13	1.211	13 2 33.8	5.67	11 15.6
11	14 25 50.15	−1.203	−13 0 18.1	+5.63	11 11.2
12	14 25 21.38	1.194	12 58 3.6	5.58	11 6.8
13	14 24 52.84	1.184	12 55 50.2	5.53	11 2.4
14	14 24 24.55	1.173	12 53 38.2	5.47	10 58.0
15	14 23 56.51	1.162	12 51 27.5	5.41	10 53.6
16	14 23 28.75	−1.150	−12 49 18.3	+5.35	10 49.2
17	14 23 1.29	1.137	12 47 10.6	5.28	10 44.8
18	14 22 34.14	1.124	12 45 4.6	5.21	10 40.4
19	14 22 7.33	1.110	12 43 0.3	5.14	10 36.0
20	14 21 40.86	1.095	12 40 57.9	5.06	10 31.6
21	14 21 14.76	−1.079	−12 38 57.4	+4.98	10 27.3
22	14 20 49.04	1.063	12 36 58.9	4.89	10 22.9
23	14 20 23.72	1.046	12 35 2.4	4.80	10 18.6
24	14 19 58.82	1.028	12 33 8.2	4.71	10 14.2
25	14 19 34.34	1.010	12 31 16.2	4.62	10 9.9
26	14 19 10.31	−0.991	−12 29 26.6	+4.52	10 5.6
27	14 18 46.74	0.972	12 27 39.4	4.41	10 1.3
28	14 18 23.65	0.952	12 25 54.7	4.31	9 57.0
29	14 18 1.05	0.931	12 24 12.6	4.20	9 52.7
30	14 17 38.96	0.910	12 22 33.2	4.09	9 48.4
31	14 17 17.39	−0.888	−12 20 56.5	+3.97	9 44.1
32	14 16 56.36	−0.865	−12 19 22.7	+3.85	9 39.8

JUNE.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	14 16 56.36	−0.865	−12 19 22.7	+3.85	9 39.8
2	14 16 35.86	0.842	12 17 51.7	3.73	9 35.5
3	14 16 15.92	0.819	12 16 23.7	3.61	9 31.3
4	14 15 56.55	0.795	12 14 58.6	3.48	9 27.0
5	14 15 37.75	0.771	12 13 36.6	3.35	9 22.8
6	14 15 19.53	−0.747	−12 12 17.7	+3.22	9 18.6
7	14 15 1.91	0.722	12 11 2.0	3.09	9 14.3
8	14 14 44.89	0.697	12 9 49.4	2.96	9 10.1
9	14 14 28.48	0.672	12 8 40.1	2.83	9 5.9
10	14 14 12.68	0.646	12 7 34.0	2.69	9 1.7
11	14 13 57.51	−0.620	−12 6 31.2	+2.55	8 57.5
12	14 13 42.96	0.593	12 5 31.7	2.41	8 53.4
13	14 13 29.05	0.566	12 4 35.6	2.27	8 49.2
14	14 13 15.78	0.539	12 3 42.9	2.13	8 45.0
15	14 13 3.16	0.512	12 2 53.6	1.99	8 40.9
16	14 12 51.19	−0.485	−12 2 7.7	+1.84	8 36.8
17	14 12 39.88	0.458	12 1 25.4	1.70	8 32.7
18	14 12 29.23	0.430	12 0 46.5	1.55	8 28.6
19	14 12 19.25	0.402	12 0 11.1	1.40	8 24.5
20	14 12 9.94	0.374	11 59 39.3	1.25	8 20.4
21	14 12 1.31	−0.346	−11 59 11.1	+1.10	8 16.3
22	14 11 53.36	0.317	11 58 46.5	0.95	8 12.3
23	14 11 46.10	0.289	11 58 25.5	0.80	8 8.2
24	14 11 39.52	0.260	11 58 8.2	0.65	8 4.2
25	14 11 33.64	0.231	11 57 54.5	0.50	8 0.2
26	14 11 28.45	−0.202	−11 57 44.5	+0.34	7 56.2
27	14 11 23.96	0.173	11 57 38.2	0.19	7 52.2
28	14 11 20.17	0.143	11 57 35.6	+0.03	7 48.2
29	14 11 17.08	0.114	11 57 36.6	−0.12	7 44.2
30	14 11 14.69	0.085	11 57 41.3	0.27	7 40.2
31	14 11 13.00	−0.056	−11 57 49.7	−0.43	7 36.3
32	14 11 12.00	−0.027	−11 58 1.8	−0.58	7 32.3

Day of the Month.	1st.	9th.	17th.	25th.
	″	″	″	″
Semidiameter	21.31	21.28	21.15	20.94
Horizontal Parallax . .	1.99	1.99	1.98	1.96

Day of the Month.	2d.	10th.	18th.	26th.
	″	″	″	″
Semidiameter	20.66	20.32	19.94	19.53
Horizontal Parallax . .	1.93	1.90	1.86	1.83

NOTE.—The sign + indicates north declinations; the sign − indicates south declinations.

GREENWICH MEAN TIME.

JULY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	14 11 13.00	−0.056	−11 57 49.7	−0.43	7 36.3
2	14 11 12.00	−0.027	11 58 1.8	0.58	7 32.3
3	14 11 11.71	+0.002	11 58 17.5	0.73	7 28.4
4	14 11 12.12	0.031	11 58 36.9	0.88	7 24.5
5	14 11 13.22	0.060	11 58 59.9	1.03	7 20.6
6	14 11 15.02	+0.089	−11 59 26.5	−1.18	7 16.7
7	14 11 17.51	0.118	11 59 56.7	1.33	7 12.8
8	14 11 20.69	0.147	12 0 30.5	1.48	7 8.9
9	14 11 24.56	0.176	12 1 7.9	1.63	7 5.0
10	14 11 29.11	0.204	12 1 48.8	1.78	7 1.2
11	14 11 34.34	+0.233	−12 2 33.2	−1.93	6 57.3
12	14 11 40.26	0.261	12 3 21.1	2.08	6 53.5
13	14 11 46.85	0.289	12 4 12.5	2.22	6 49.7
14	14 11 54.12	0.317	12 5 7.3	2.36	6 45.9
15	14 12 2.06	0.345	12 6 5.6	2.50	6 42.1
16	14 12 10.67	+0.373	−12 7 7.3	−2.64	6 38.3
17	14 12 19.95	0.401	12 8 12.3	2.78	6 34.5
18	14 12 29.89	0.428	12 9 20.7	2.92	6 30.8
19	14 12 40.49	0.456	12 10 32.5	3.06	6 27.0
20	14 12 51.76	0.483	12 11 47.6	3.20	6 23.3
21	14 13 3.68	+0.510	−12 13 5.9	−3.34	6 19.6
22	14 13 16.25	0.537	12 14 27.6	3.47	6 15.9
23	14 13 29.47	0.564	12 15 52.5	3.61	6 12.2
24	14 13 43.34	0.591	12 17 20.6	3.74	6 8.5
25	14 13 57.86	0.618	12 18 51.9	3.87	6 4.8
26	14 14 13.01	+0.645	−12 20 26.4	−4.00	6 1.1
27	14 14 28.80	0.671	12 22 4.1	4.13	5 57.5
28	14 14 45.22	0.697	12 23 44.8	4.26	5 53.8
29	14 15 2.27	0.723	12 25 28.5	4.39	5 50.2
30	14 15 19.93	0.749	12 27 15.3	4.51	5 46.5
31	14 15 38.22	+0.775	−12 29 5.0	−4.63	5 42.9
32	14 15 57.11	+0.800	−12 30 57.6	−4.75	5 39.3

AUGUST.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	14 15 57.11	+0.800	−12 30 57.6	−4.75	5 39.3
2	14 16 16.60	0.825	12 32 53.2	4.87	5 35.7
3	14 16 36.69	0.849	12 34 51.6	4.99	5 32.1
4	14 16 57.38	0.874	12 36 52.8	5.11	5 28.5
5	14 17 18.65	0.898	12 38 56.7	5.22	5 24.9
6	14 17 40.50	+0.922	−12 41 3.3	−5.33	5 21.4
7	14 18 2.93	0.946	12 43 12.6	5.44	5 17.8
8	14 18 25.93	0.970	12 45 24.5	5.55	5 14.3
9	14 18 49.49	0.994	12 47 39.0	5.66	5 10.7
10	14 19 13.61	1.017	12 49 56.1	5.77	5 7.2
11	14 19 38.29	+1.040	−12 52 15.7	−5.87	5 3.6
12	14 20 3.52	1.063	12 54 37.7	5.97	5 0.1
13	14 20 29.29	1.085	12 57 2.2	6.07	4 56.6
14	14 20 55.60	1.108	12 59 29.0	6.17	4 53.1
15	14 21 22.45	1.130	13 1 58.2	6.26	4 49.6
16	14 21 49.83	+1.152	−13 4 29.8	−6.36	4 46.1
17	14 22 17.74	1.174	13 7 3.6	6.45	4 42.6
18	14 22 46.17	1.196	13 9 39.6	6.55	4 39.1
19	14 23 15.12	1.217	13 12 17.9	6.64	4 35.7
20	14 23 44.58	1.238	13 14 58.3	6.73	4 32.2
21	14 24 14.55	+1.259	−13 17 40.9	−6.82	4 28.8
22	14 24 45.03	1.280	13 20 25.6	6.91	4 25.4
23	14 25 16.00	1.301	13 23 12.3	6.99	4 22.0
24	14 25 47.46	1.322	13 26 1.0	7.07	4 18.6
25	14 26 19.41	1.342	13 28 51.7	7.15	4 15.2
26	14 26 51.85	+1.362	−13 31 44.3	−7.23	4 11.8
27	14 27 24.76	1.381	13 34 38.8	7.31	4 8.4
28	14 27 58.14	1.400	13 37 35.1	7.39	4 5.0
29	14 28 31.98	1.419	13 40 33.2	7.46	4 1.6
30	14 29 6.28	1.438	13 43 33.0	7.53	3 58.3
31	14 29 41.04	+1.457	−13 46 34.5	−7.60	3 54.9
32	14 30 16.23	+1.476	−13 49 37.6	−7.67	3 51.6

Day of the Month.	4th.	12th.	20th.	28th.
	″	″	″	″
Semidiameter	19.10	18.66	18.22	17.80
Horizontal Parallax	1.79	1.74	1.70	1.66

Day of the Month.	5th.	13th.	21st.	29th.
	″	″	″	″
Semidiameter	17.40	17.01	16.66	16.33
Horizontal Parallax	1.63	1.59	1.56	1.53

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

GREENWICH MEAN TIME.

SEPTEMBER.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	14 30 16.23	+ 1.476	− 13 49 37.6	− 7.67	3 51.6
2	14 30 51.87	1.494	13 52 42.3	7.73	3 48.2
3	14 31 27.94	1.512	13 55 48.6	7.79	3 44.9
4	14 32 4.44	1.530	13 58 56.4	7.85	3 41.6
5	14 32 41.36	1.547	14 2 5.6	7.91	3 38.3
6	14 33 18.70	+ 1.564	− 14 5 16.2	− 7.97	3 35.0
7	14 33 56.45	1.581	14 8 28.2	8.03	3 31.7
8	14 34 34.60	1.598	14 11 41.6	8.08	3 28.4
9	14 35 13.16	1.615	14 14 56.2	8.14	3 25.1
10	14 35 52.12	1.631	14 18 12.1	8.19	3 21.8
11	14 36 31.47	+ 1.648	− 14 21 29.2	− 8.24	3 18.5
12	14 37 11.21	1.664	14 24 47.5	8.29	3 15.2
13	14 37 51.33	1.680	14 28 7.0	8.34	3 12.0
14	14 38 31.83	1.695	14 31 27.6	8.38	3 8.7
15	14 39 12.70	1.711	14 34 49.2	8.43	3 5.5
16	14 39 53.95	+ 1.726	− 14 38 11.9	− 8.47	3 2.2
17	14 40 35.57	1.741	14 41 35.6	8.51	2 59.0
18	14 41 17.54	1.756	14 45 0.2	8.55	2 55.7
19	14 41 59.87	1.771	14 48 25.8	8.59	2 52.4
20	14 42 42.56	1.786	14 51 52.3	8.62	2 49.2
21	14 43 25.60	+ 1.800	− 14 55 19.6	− 8.66	2 46.0
22	14 44 8.97	1.814	14 58 47.7	8.69	2 42.8
23	14 44 52.68	1.828	15 2 16.6	8.72	2 39.6
24	14 45 36.72	1.842	15 5 46.2	8.75	2 36.5
25	14 46 21.09	1.855	15 9 16.5	8.78	2 33.3
26	14 47 5.77	+ 1.868	− 15 12 47.5	− 8.80	2 30.1
27	14 47 50.77	1.881	15 16 19.0	8.83	2 26.9
28	14 48 36.07	1.894	15 19 51.0	8.85	2 23.7
29	14 49 21.68	1.907	15 23 23.6	8.87	2 20.5
30	14 50 7.58	1.919	15 26 56.7	8.89	2 17.4
31	14 50 53.78	+ 1.931	− 15 30 30.1	− 8.91	2 14.2
32	14 51 40.26	+ 1.943	− 15 34 4.0	− 8.92	2 11.1

Day of the Month.	6th.	14th.	22d.	30th.
	″	″	″	″
Semidiameter	16.03	15.77	15.53	15.33
Horizontal Parallax	1.50	1.47	1.45	1.43

OCTOBER.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	14 50 53.78	+ 1.931	− 15 30 30.1	− 8.91	2 14.2
2	14 51 40.26	1.943	15 34 4.0	8.92	2 11.1
3	14 52 27.02	1.955	15 37 38.2	8.93	2 7.9
4	14 53 14.06	1.966	15 41 12.7	8.94	2 4.8
5	14 54 1.37	1.977	15 44 47.5	8.95	2 1.6
6	14 54 48.94	+ 1.988	− 15 48 22.5	− 8.96	1 58.5
7	14 55 36.77	1.999	15 51 57.8	8.97	1 55.3
8	14 56 24.86	2.009	15 55 33.2	8.98	1 52.2
9	14 57 13.20	2.020	15 59 8.8	8.98	1 49.0
10	14 58 1.79	2.030	16 2 44.5	8.99	1 45.9
11	14 58 50.63	+ 2.040	− 16 6 20.3	− 8.99	1 42.8
12	14 59 39.71	2.050	16 9 56.1	8.99	1 39.7
13	15 0 29.02	2.060	16 13 31.9	8.99	1 36.6
14	15 1 18.57	2.069	16 17 7.8	8.99	1 33.4
15	15 2 8.34	2.078	16 20 43.6	8.99	1 30.3
16	15 2 58.34	+ 2.087	− 16 24 19.3	− 8.99	1 27.2
17	15 3 48.55	2.096	16 27 54.9	8.98	1 24.1
18	15 4 38.98	2.105	16 31 30.4	8.98	1 21.0
19	15 5 29.61	2.114	16 35 5.7	8.97	1 17.9
20	15 6 20.45	2.122	16 38 40.8	8.96	1 14.8
21	15 7 11.48	+ 2.130	− 16 42 15.6	− 8.95	1 11.7
22	15 8 2.71	2.138	16 45 50.2	8.93	1 8.6
23	15 8 54.12	2.146	16 49 24.5	8.92	1 5.6
24	15 9 45.71	2.153	16 52 58.5	8.90	1 2.5
25	15 10 37.48	2.160	16 56 32.1	8.89	0 59.4
26	15 11 29.42	+ 2.167	− 17 0 5.2	− 8.87	0 56.4
27	15 12 21.52	2.174	17 3 37.8	8.85	0 53.3
28	15 13 13.78	2.180	17 7 10.0	8.83	0 50.3
29	15 14 6.19	2.187	17 10 41.7	8.81	0 47.2
30	15 14 58.74	2.193	17 14 12.8	8.78	0 44.1
31	15 15 51.44	+ 2.199	− 17 17 43.3	− 8.76	0 41.1
32	15 16 44.28	+ 2.204	− 17 21 13.2	− 8.73	0 38.0

Day of the Month.	8th.	16th.	24th.
	″	″	″
Semidiameter	15.16	15.02	14.91
Horizontal Parallax	1.42	1.40	1.39

NOTE.—The sign + indicates north declinations; the sign − indicates south declinations.

GREENWICH MEAN TIME.

NOVEMBER.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	15 16 44.28	+2.204	−17 21 13.2	−8.73	0 38.0
2	15 17 37.25	2.210	17 24 42.5	8.71	0 35.0
3	15 18 30.34	2.215	17 28 11.1	8.68	0 31.9
4	15 19 23.56	2.220	17 31 39.1	8.65	0 28.9
5	15 20 16.90	2.225	17 35 6.3	8.62	0 25.8
6	15 21 10.34	+2.230	−17 38 32.8	−8.59	0 22.8
7	15 22 3.90	2.234	17 41 58.5	8.56	0 19.7
8	15 22 57.56	2.238	17 45 23.4	8.53	0 16.7
9	15 23 51.32	2.242	17 48 47.6	8.49	0 13.6
10	15 24 45.17	2.246	17 52 10.9	8.46	0 10.6
11	15 25 39.11	+2.250	−17 55 33.3	−8.42	0 7.5
12	15 26 33.14	2.253	17 58 54.9	8.38	0 4.5
13	15 27 27.25	2.256	18 2 15.6	8.34	0 1.5 23 58.5
14	15 28 21.44	2.259	18 5 35.4	8.30	23 55.5
15	15 29 15.70	2.262	18 8 54.2	8.26	23 52.4
16	15 30 10.02	+2.265	−18 12 12.0	−8.22	23 49.4
17	15 31 4.40	2.267	18 15 28.9	8.18	23 46.4
18	15 31 58.84	2.269	18 18 44.7	8.14	23 43.4
19	15 32 53.32	2.271	18 21 59.4	8.09	23 40.3
20	15 33 47.84	2.273	18 25 13.1	8.05	23 37.3
21	15 34 42.40	+2.274	−18 28 25.7	−8.00	23 34.2
22	15 35 36.98	2.275	18 31 37.1	7.95	23 31.2
23	15 36 31.59	2.276	18 34 47.3	7.90	23 28.2
24	15 37 26.21	2.276	18 37 56.4	7.85	23 25.2
25	15 38 20.84	2.276	18 41 4.3	7.80	23 22.2
26	15 39 15.48	+2.276	−18 44 11.0	−7.75	23 19.1
27	15 40 10.11	2.276	18 47 16.4	7.70	23 16.1
28	15 41 4.73	2.275	18 50 20.6	7.65	23 13.1
29	15 41 59.35	2.275	18 53 23.4	7.59	23 10.0
30	15 42 53.94	2.274	18 56 25.0	7.54	23 7.0
31	15 43 48.50	+2.273	−18 59 25.3	−7.48	23 4.0
32	15 44 43.04	+2.272	−19 2 24.2	−7.42	23 0.9

DECEMBER.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	15 43 48.50	+2.273	−18 59 25.3	−7.48	23 4.0
2	15 44 43.04	2.272	19 2 24.2	7.42	23 0.9
3	15 45 37.54	2.270	19 5 21.7	7.37	22 57.9
4	15 46 31.99	2.268	19 8 17.9	7.31	22 54.9
5	15 47 26.40	2.266	19 11 12.7	7.26	22 51.9
6	15 48 20.76	+2.264	−19 14 6.2	−7.20	22 48.8
7	15 49 15.06	2.261	19 16 58.2	7.14	22 45.8
8	15 50 9.30	2.259	19 19 48.8	7.08	22 42.8
9	15 51 3.47	2.256	19 22 38.0	7.02	22 39.7
10	15 51 57.57	2.253	19 25 25.7	6.96	22 36.7
11	15 52 51.59	+2.249	−19 28 12.0	−6.90	22 33.6
12	15 53 45.52	2.246	19 30 56.8	6.84	22 30.6
13	15 54 39.37	2.242	19 33 40.2	6.77	22 27.6
14	15 55 33.11	2.238	19 36 22.0	6.71	22 24.5
15	15 56 26.75	2.233	19 39 2.3	6.65	22 21.5
16	15 57 20.28	+2.228	−19 41 41.1	−6.59	22 18.4
17	15 58 13.69	2.223	19 44 18.3	6.52	22 15.4
18	15 59 6.98	2.218	19 46 54.0	6.46	22 12.3
19	16 0 0.13	2.212	19 49 28.1	6.39	22 9.3
20	16 0 53.14	2.206	19 52 0.7	6.33	22 6.2
21	16 1 46.01	+2.200	−19 54 31.6	−6.26	22 3.2
22	16 2 38.72	2.193	19 57 1.0	6.19	22 0.1
23	16 3 31.27	2.186	19 59 28.7	6.12	21 57.0
24	16 4 23.65	2.179	20 1 54.8	6.05	21 54.0
25	16 5 15.86	2.171	20 4 19.2	5.98	21 50.9
26	16 6 7.88	+2.163	−20 6 42.0	−5.92	21 47.9
27	16 6 59.71	2.155	20 9 3.2	5.85	21 44.8
28	16 7 51.35	2.147	20 11 22.7	5.78	21 41.8
29	16 8 42.79	2.139	20 13 40.5	5.71	21 38.7
30	16 9 34.02	2.130	20 15 56.6	5.64	21 35.6
31	16 10 25.03	+2.121	−20 18 11.1	−5.57	21 32.5
32	16 11 15.82	+2.112	−20 20 23.9	−5.50	21 29.4

Day of the Month.	1st.	9th.	17th.	25th.
	″	″	″	″
Semidiameter	14.84	14.79	14.77	14.79
Horizontal Parallax	1.39	1.38	1.38	1.38

Day of the Month.	3d.	11th.	19th.	27th.	35th.
	″	″	″	″	″
Semidiameter	14.85	14.93	15.05	15.21	15.39
Horizontal Parallax	1.39	1.40	1.41	1.42	1.44

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

GREENWICH MEAN TIME.

JANUARY.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	1 54 4.97	−0.031	+8 59 43.3	+0.61	7 12.8
2	1 54 4.45	−0.013	8 59 59.3	0.72	7 8.9
3	1 54 4.36	+0.005	9 0 17.7	0.82	7 5.0
4	1 54 4.70	0.023	9 0 38.5	0.92	7 1.0
5	1 54 5.46	0.041	9 1 1.8	1.02	6 57.1
6	1 54 6.65	+0.058	+9 1 27.5	+1.12	6 53.2
7	1 54 8.27	0.076	9 1 55.4	1.22	6 49.3
8	1 54 10.32	0.094	9 2 25.7	1.32	6 45.4
9	1 54 12.79	0.112	9 2 58.4	1.41	6 41.5
10	1 54 15.68	0.130	9 3 33.4	1.51	6 37.6
11	1 54 19.00	+0.147	+9 4 10.8	+1.61	6 33.8
12	1 54 22.74	0.164	9 4 50.5	1.70	6 29.9
13	1 54 26.89	0.182	9 5 32.4	1.80	6 26.0
14	1 54 31.46	0.199	9 6 16.6	1.89	6 22.2
15	1 54 36.45	0.217	9 7 3.2	1.98	6 18.3
16	1 54 41.86	+0.234	+9 7 52.0	+2.08	6 14.5
17	1 54 47.68	0.251	9 8 43.0	2.17	6 10.6
18	1 54 53.91	0.268	9 9 36.2	2.26	6 6.8
19	1 55 0.56	0.285	9 10 31.6	2.35	6 3.0
20	1 55 7.61	0.302	9 11 29.2	2.44	5 59.2
21	1 55 15.07	+0.319	+9 12 29.0	+2.54	5 55.4
22	1 55 22.94	0.336	9 13 30.9	2.62	5 51.6
23	1 55 31.22	0.353	9 14 35.0	2.71	5 47.8
24	1 55 39.90	0.370	9 15 41.2	2.80	5 44.0
25	1 55 48.98	0.387	9 16 49.5	2.89	5 40.2
26	1 55 58.46	+0.403	+9 17 59.9	+2.98	5 36.4
27	1 56 8.33	0.420	9 19 12.4	3.06	5 32.7
28	1 56 18.60	0.436	9 20 26.9	3.15	5 28.9
29	1 56 29.26	0.452	9 21 43.5	3.23	5 25.2
30	1 56 40.32	0.469	9 23 2.1	3.32	5 21.4
31	1 56 51.76	+0.485	+9 24 22.7	+3.40	5 17.7
32	1 57 3.58	+0.501	+9 25 45.2	+3.48	5 14.0

FEBRUARY.

Day of Month.	Apparent Right Ascension. Noon.	Var. of R. A. for 1 Hour. Noon.	Apparent Declination. Noon.	Var. of Decl. for 1 Hour. Noon.	Meridian Passage.
	h m s	s	° ′ ″	″	h m
1	1 57 3.58	+0.501	+9 25 45.2	+3.48	5 14.0
2	1 57 15.78	0.516	9 27 9.7	3.56	5 10.2
3	1 57 28.36	0.532	9 28 36.1	3.64	5 6.5
4	1 57 41.31	0.547	9 30 4.3	3.72	5 2.8
5	1 57 54.63	0.563	9 31 34.4	3.79	4 59.1
6	1 58 8.32	+0.578	+9 33 6.4	+3.87	4 55.4
7	1 58 22.37	0.593	9 34 40.2	3.94	4 51.7
8	1 58 36.78	0.608	9 36 15.6	4.02	4 48.0
9	1 58 51.54	0.622	9 37 52.8	4.09	4 44.3
10	1 59 6.65	0.637	9 39 31.7	4.16	4 40.6
11	1 59 22.10	+0.651	+9 41 12.3	+4.23	4 36.9
12	1 59 37.90	0.665	9 42 54.6	4.29	4 33.3
13	1 59 54.04	0.679	9 44 38.5	4.36	4 29.6
14	2 0 10.51	0.693	9 46 23.9	4.43	4 26.0
15	2 0 27.31	0.707	9 48 10.9	4.49	4 22.3
16	2 0 44.44	+0.721	+9 49 59.5	+4.56	4 18.6
17	2 1 1.90	0.734	9 51 49.6	4.62	4 15.0
18	2 1 19.68	0.747	9 53 41.2	4.68	4 11.4
19	2 1 37.78	0.761	9 55 34.2	4.74	4 7.7
20	2 1 56.19	0.774	9 57 28.7	4.80	4 4.1
21	2 2 14.91	+0.787	+9 59 24.7	+4.86	4 0.5
22	2 2 33.94	0.799	10 1 22.0	4.92	3 56.9
23	2 2 53.28	0.812	10 3 20.7	4.97	3 53.3
24	2 3 12.91	0.824	10 5 20.7	5.03	3 49.7
25	2 3 32.84	0.836	10 7 22.0	5.08	3 46.1
26	2 3 53.06	+0.849	+10 9 24.6	+5.13	3 42.5
27	2 4 13.57	0.861	10 11 28.5	5.19	3 38.9
28	2 4 34.36	0.872	10 13 33.6	5.24	3 35.3
29	2 4 55.43	0.884	10 15 39.9	5.29	3 31.7
30	2 5 16.78	0.895	10 17 47.3	5.33	3 28.1
31	2 5 38.40	+0.906	+10 19 55.9	+5.38	3 24.6
32	2 6 0.28	+0.917	+10 22 5.6	+5.42	3 21.0

Day of the Month.	5th.	13th.	21st.	29th.
	″	″	″	″
Semidiameter	8.77	8.65	8.52	8.40
Horizontal Parallax	1.00	0.98	0.96	0.94

Day of the Month.	6th.	14th.	22d.
	″	″	″
Semidiameter	8.28	8.17	8.08
Horizontal Parallax	0.93	0.92	0.91

NOTE.—The sign + indicates north declinations; the sign − indicates south declinations.

GREENWICH MEAN TIME.

MARCH.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	2 4 55.43	+0.884	+10 15 39.9	+5.29	3 31.7
2	2 5 16.78	0.895	10 17 47.3	5.33	3 28.1
3	2 5 38.40	0.906	10 19 55.9	5.38	3 24.6
4	2 6 0.28	0.917	10 22 5.6	5.42	3 21.0
5	2 6 22.43	0.928	10 24 16.3	5.47	3 17.4
6	2 6 44.83	+0.939	+10 26 28.1	+5.51	3 13.9
7	2 7 7.48	0.949	10 28 40.9	5.55	3 10.3
8	2 7 30.38	0.959	10 30 54.6	5.59	3 6.8
9	2 7 53.52	0.969	10 33 9.3	5.63	3 3.2
10	2 8 16.90	0.979	10 35 24.9	5.67	2 59.7
11	2 8 40.51	+0.989	+10 37 41.3	+5.70	2 56.1
12	2 9 4.35	0.998	10 39 58.6	5.74	2 52.6
13	2 9 28.41	1.007	10 42 16.7	5.77	2 49.1
14	2 9 52.70	1.016	10 44 35.7	5.80	2 45.5
15	2 10 17.20	1.025	10 46 55.4	5.84	2 42.0
16	2 10 41.91	+1.034	+10 49 15.8	+5.87	2 38.5
17	2 11 6.83	1.043	10 51 36.9	5.90	2 35.0
18	2 11 31.96	1.051	10 53 58.8	5.92	2 31.4
19	2 11 57.29	1.060	10 56 21.3	5.95	2 27.9
20	2 12 22.82	1.068	10 58 44.4	5.98	2 24.4
21	2 12 48.54	+1.076	+11 1 8.1	+6.00	2 20.9
22	2 13 14.44	1.083	11 3 32.5	6.02	2 17.4
23	2 13 40.53	1.091	11 5 57.4	6.05	2 13.9
24	2 14 6.81	1.098	11 8 22.9	6.07	2 10.4
25	2 14 33.26	1.106	11 10 48.9	6.09	2 6.9
26	2 14 59.88	+1.113	+11 13 15.3	+6.11	2 3.4
27	2 15 26.67	1.120	11 15 42.2	6.13	2 0.0
28	2 15 53.62	1.126	11 18 9.5	6.15	1 56.5
29	2 16 20.74	1.133	11 20 37.2	6.16	1 53.0
30	2 16 48.01	1.139	11 23 5.3	6.18	1 49.5
31	2 17 15.43	+1.145	+11 25 33.7	+6.19	1 46.0
32	2 17 42.99	+1.151	+11 28 2.5	+6.20	1 42.6

APRIL.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	2 17 42.99	+1.151	+11 28 2.5	+6.20	1 42.6
2	2 18 10.70	1.157	11 30 31.5	6.21	1 39.1
3	2 18 38.54	1.163	11 33 0.8	6.22	1 35.6
4	2 19 6.51	1.168	11 35 30.3	6.23	1 32.2
5	2 19 34.60	1.173	11 38 0.0	6.24	1 28.7
6	2 20 2.82	+1.178	+11 40 29.9	+6.25	1 25.2
7	2 20 31.16	1.183	11 42 59.9	6.25	1 21.8
8	2 20 59.61	1.188	11 45 30.0	6.26	1 18.3
9	2 21 28.16	1.192	11 48 0.2	6.26	1 14.8
10	2 21 56.82	1.196	11 50 30.5	6.26	1 11.4
11	2 22 25.59	+1.200	+11 53 0.8	+6.26	1 7.9
12	2 22 54.45	1.204	11 55 31.1	6.26	1 4.5
13	2 23 23.40	1.208	11 58 1.5	6.26	1 1.0
14	2 23 52.44	1.212	12 0 31.8	6.26	0 57.6
15	2 24 21.56	1.215	12 3 2.0	6.26	0 54.1
16	2 24 50.77	+1.218	+12 5 32.2	+6.26	0 50.7
17	2 25 20.05	1.222	12 8 2.4	6.25	0 47.2
18	2 25 49.40	1.225	12 10 32.5	6.25	0 43.8
19	2 26 18.83	1.227	12 13 2.4	6.24	0 40.3
20	2 26 48.33	1.230	12 15 32.1	6.24	0 36.9
21	2 27 17.88	+1.233	+12 18 1.7	+6.23	0 33.5
22	2 27 47.49	1.235	12 20 31.1	6.22	0 30.0
23	2 28 17.15	1.237	12 23 0.3	6.21	0 26.6
24	2 28 46.86	1.239	12 25 29.2	6.20	0 23.1
25	2 29 16.62	1.241	12 27 57.9	6.19	0 19.7
26	2 29 46.42	+1.242	+12 30 26.3	+6.18	0 16.3
27	2 30 16.25	1.244	12 32 54.3	6.16	0 12.8
28	2 30 46.12	1.245	12 35 22.0	6.15	0 9.4
29	2 31 16.01	1.246	12 37 49.4	6.13	0 6.0
30	2 31 45.92	1.247	12 40 16.4	6.12	0 2.5 23 59.1
31	2 32 15.85	+1.247	+12 42 43.0	+6.10	23 55.6
32	2 32 45.79	+1.248	+12 45 9.2	+6.08	23 52.2

Day of the Month.	2d.	10th.	18th.	26th.
	″	″	″	″
Semidiameter	7.99	7.91	7.84	7.78
Horizontal Parallax	0.90	0.89	0.88	0.88

Day of the Month.	3d.	11th.	19th.	27th.
	″	″	″	″
Semidiameter	7.73	7.70	7.67	7.66
Horizontal Parallax	0.87	0.87	0.86	0.86

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

GREENWICH MEAN TIME.

MAY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	2 32 15.85	+1.247	+12 42 43.0	+6.10	23 55.6
2	2 32 45.79	1.248	12 45 9.2	6.08	23 52.2
3	2 33 15.74	1.248	12 47 34.9	6.06	23 48.8
4	2 33 45.69	1.248	12 50 0.1	6.04	23 45.3
5	2 34 15.65	1.248	12 52 24.8	6.02	23 41.9
6	2 34 45.60	+1.248	+12 54 49.0	+6.00	23 38.5
7	2 35 15.53	1.247	12 57 12.7	5.97	23 35.0
8	2 35 45.45	1.246	12 59 35.8	5.95	23 31.6
9	2 36 15.36	1.246	13 1 58.4	5.93	23 28.2
10	2 36 45.24	1.245	13 4 20.4	5.90	23 24.7
11	2 37 15.10	+1.244	+13 6 41.7	+5.88	23 21.3
12	2 37 44.93	1.242	13 9 2.4	5.85	23 17.8
13	2 38 14.73	1.241	13 11 22.5	5.82	23 14.4
14	2 38 44.49	1.239	13 13 41.9	5.80	23 11.0
15	2 39 14.22	1.238	13 16 0.7	5.77	23 7.5
16	2 39 43.90	+1.236	+13 18 18.8	+5.74	23 4.1
17	2 40 13.53	1.234	13 20 36.1	5.71	23 0.6
18	2 40 43.11	1.231	13 22 52.7	5.68	22 57.2
19	2 41 12.63	1.229	13 25 8.6	5.65	22 53.8
20	2 41 42.10	1.226	13 27 23.7	5.62	22 50.3
21	2 42 11.50	+1.224	+13 29 38.1	+5.58	22 46.9
22	2 42 40.83	1.221	13 31 51.7	5.55	22 43.4
23	2 43 10.09	1.218	13 34 4.5	5.52	22 40.0
24	2 43 39.27	1.214	13 36 16.4	5.48	22 36.5
25	2 44 8.37	1.211	13 38 27.5	5.44	22 33.1
26	2 44 37.39	+1.207	+13 40 37.7	+5.41	22 29.6
27	2 45 6.31	1.203	13 42 47.1	5.37	22 26.2
28	2 45 35.14	1.199	13 44 55.5	5.33	22 22.7
29	2 46 3.87	1.195	13 47 3.0	5.29	22 19.3
30	2 46 32.49	1.190	13 49 9.6	5.25	22 15.8
31	2 47 1.00	+1.186	+13 51 15.2	+5.21	22 12.3
32	2 47 29.40	+1.181	+13 53 19.8	+5.17	22 8.9

JUNE.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	2 47 29.40	+1.181	+13 53 19.8	+5.17	22 8.9
2	2 47 57.68	1.176	13 55 23.4	5.13	22 5.4
3	2 48 25.84	1.171	13 57 26.0	5.09	22 2.0
4	2 48 53.87	1.165	13 59 27.6	5.04	21 58.5
5	2 49 21.77	1.160	14 1 28.2	5.00	21 55.0
6	2 49 49.54	+1.154	+14 3 27.7	+4.96	21 51.5
7	2 50 17.17	1.148	14 5 26.1	4.91	21 48.1
8	2 50 44.65	1.142	14 7 23.5	4.87	21 44.6
9	2 51 11.99	1.136	14 9 19.8	4.82	21 41.1
10	2 51 39.17	1.130	14 11 15.0	4.78	21 37.6
11	2 52 6.20	+1.123	+14 13 9.1	+4.73	21 34.1
12	2 52 33.08	1.116	14 15 2.0	4.68	21 30.6
13	2 52 59.80	1.110	14 16 53.8	4.64	21 27.2
14	2 53 26.34	1.103	14 18 44.5	4.59	21 23.7
15	2 53 52.72	1.096	14 20 34.0	4.54	21 20.2
16	2 54 18.93	+1.088	+14 22 22.4	+4.49	21 16.7
17	2 54 44.96	1.081	14 24 9.6	4.44	21 13.2
18	2 55 10.80	1.073	14 25 55.5	4.39	21 9.6
19	2 55 36.46	1.065	14 27 40.2	4.34	21 6.1
20	2 56 1.93	1.057	14 29 23.8	4.29	21 2.6
21	2 56 27.20	+1.049	+14 31 6.1	+4.24	20 59.1
22	2 56 52.28	1.040	14 32 47.1	4.18	20 55.6
23	2 57 17.15	1.032	14 34 26.9	4.13	20 52.1
24	2 57 41.80	1.023	14 36 5.4	4.08	20 48.6
25	2 58 6.24	1.014	14 37 42.6	4.02	20 45.0
26	2 58 30.46	+1.005	+14 39 18.4	+3.97	20 41.5
27	2 58 54.46	0.995	14 40 52.9	3.91	20 38.0
28	2 59 18.23	0.986	14 42 26.2	3.85	20 34.4
29	2 59 41.77	0.976	14 43 58.1	3.80	20 30.9
30	3 0 5.07	0.966	14 45 28.5	3.74	20 27.3
31	3 0 28.13	+0.956	+14 46 57.6	+3.68	20 23.8
32	3 0 50.94	+0.945	+14 48 25.4	+3.63	20 20.2

Day of the Month.	5th.	13th.	21st.	29th.
	″	″	″	″
Semidiameter	7.66	7.68	7.70	7.73
Horizontal Parallax . .	0.86	0.86	0.87	0.87

Day of the Month.	6th.	14th.	22d.	30th.
	″	″	″	″
Semidiameter	7.78	7.84	7.91	7.98
Horizontal Parallax . .	0.88	0.88	0.89	0.90

NOTE.—The sign + indicates north declinations; the sign − indicates south declinations.

GREENWICH MEAN TIME.

JULY.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	3 0 28.13	+0.956	+14 46 57.6	+3.68	20 23.8
2	3 0 50.94	0.945	14 48 25.4	3.63	20 20.2
3	3 1 13.51	0.935	14 49 51.8	3.57	20 16.6
4	3 1 35.82	0.924	14 51 16.7	3.51	20 13.1
5	3 1 57.87	0.913	14 52 40.2	3.45	20 9.5
6	3 2 19.66	+0.902	+14 54 2.3	+3.39	20 5.9
7	3 2 41.19	0.891	14 55 23.0	3.33	20 2.4
8	3 3 2.44	0.880	14 56 42.2	3.27	19 58.8
9	3 3 23.42	0.869	14 58 0.0	3.21	19 55.2
10	3 3 44.13	0.857	14 59 16.4	3.15	19 51.6
11	3 4 4.56	+0.845	+15 0 31.3	+3.09	19 48.0
12	3 4 24.71	0.833	15 1 44.8	3.03	19 44.4
13	3 4 44.57	0.821	15 2 56.8	2.97	19 40.8
14	3 5 4.13	0.809	15 4 7.3	2.91	19 37.2
15	3 5 23.40	0.797	15 5 16.3	2.85	19 33.6
16	3 5 42.37	+0.784	+15 6 23.8	+2.78	19 29.9
17	3 6 1.03	0.771	15 7 29.8	2.72	19 26.3
18	3 6 19.39	0.758	15 8 34.3	2.66	19 22.7
19	3 6 37.44	0.745	15 9 37.2	2.59	19 19.0
20	3 6 55.17	0.732	15 10 38.6	2.53	19 15.4
21	3 7 12.58	+0.719	+15 11 38.5	+2.46	19 11.7
22	3 7 29.66	0.705	15 12 36.8	2.40	19 8.1
23	3 7 46.41	0.691	15 13 33.5	2.33	19 4.4
24	3 8 2.82	0.677	15 14 28.7	2.26	19 0.8
25	3 8 18.90	0.663	15 15 22.3	2.20	18 57.1
26	3 8 34.64	+0.648	+15 16 14.2	+2.13	18 53.4
27	3 8 50.03	0.634	15 17 4.5	2.06	18 49.7
28	3 9 5.06	0.619	15 17 53.3	2.00	18 46.0
29	3 9 19.74	0.604	15 18 40.4	1.93	18 42.4
30	3 9 34.07	0.589	15 19 25.9	1.86	18 38.7
31	3 9 48.03	+0.574	+15 20 9.8	+1.79	18 35.0
32	3 10 1.63	+0.559	+15 20 52.0	+1.73	18 31.2

AUGUST.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	3 10 1.63	+0.559	+15 20 52.0	+1.73	18 31.2
2	3 10 14.86	0.544	15 21 32.6	1.66	18 27.5
3	3 10 27.73	0.528	15 22 11.6	1.59	18 23.8
4	3 10 40.23	0.513	15 22 48.9	1.52	18 20.1
5	3 10 52.35	0.497	15 23 24.6	1.45	18 16.3
6	3 11 4.09	+0.481	+15 23 58.7	+1.38	18 12.6
7	3 11 15.45	0.465	15 24 31.1	1.32	18 8.8
8	3 11 26.43	0.449	15 25 1.9	1.25	18 5.1
9	3 11 37.02	0.433	15 25 31.0	1.18	18 1.3
10	3 11 47.21	0.417	15 25 58.4	1.11	17 57.6
11	3 11 57.03	+0.401	+15 26 24.2	+1.04	17 53.8
12	3 12 6.45	0.384	15 26 48.3	0.97	17 50.0
13	3 12 15.47	0.367	15 27 10.8	0.90	17 46.2
14	3 12 24.09	0.351	15 27 31.6	0.83	17 42.4
15	3 12 32.30	0.334	15 27 50.7	0.76	17 38.6
16	3 12 40.11	+0.317	+15 28 8.1	+0.69	17 34.8
17	3 12 47.51	0.300	15 28 23.9	0.62	17 31.0
18	3 12 54.50	0.283	15 28 38.0	0.55	17 27.2
19	3 13 1.08	0.265	15 28 50.3	0.48	17 23.4
20	3 13 7.24	0.248	15 29 0.9	0.41	17 19.5
21	3 13 12.98	+0.230	+15 29 9.9	+0.34	17 15.7
22	3 13 18.30	0.213	15 29 17.2	0.27	17 11.8
23	3 13 23.20	0.195	15 29 22.8	0.20	17 8.0
24	3 13 27.67	0.177	15 29 26.7	0.13	17 4.1
25	3 13 31.71	0.160	15 29 28.8	+0.06	17 0.2
26	3 13 35.33	+0.142	+15 29 29.2	−0.02	16 56.4
27	3 13 38.52	0.124	15 29 28.0	0.09	16 52.5
28	3 13 41.28	0.106	15 29 25.1	0.16	16 48.6
29	3 13 43.61	0.088	15 29 20.4	0.23	16 44.7
30	3 13 45.51	0.070	15 29 14.1	0.30	16 40.8
31	3 13 46.98	+0.052	+15 29 6.2	−0.37	16 36.9
32	3 13 48.02	+0.034	+15 28 56.6	−0.44	16 33.0

Day of the Month.	8th.	16th.	24th.
	″	″	″
Semidiameter	8.07	8.17	8.28
Horizontal Parallax	0.91	0.92	0.93

Day of the Month.	1st.	9th.	17th.	25th.
	″	″	″	″
Semidiameter	8.39	8.51	8.63	8.76
Horizontal Parallax	0.94	0.96	0.97	0.99

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

GREENWICH MEAN TIME.

SEPTEMBER.

Day of Month.	Apparent Right Ascension.	Var. of R.A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	3 13 48.02	+0.034	+15 28 56.6	−0.44	16 33.0
2	3 13 48.62	+0.016	15 28 45.3	0.50	16 29.0
3	3 13 48.80	−0.002	15 28 32.4	0.57	16 25.1
4	3 13 48.55	0.019	15 28 17.8	0.64	16 21.2
5	3 13 47.88	0.037	15 28 1.6	0.71	16 17.2
6	3 13 46.77	−0.055	+15 27 43.8	−0.78	16 13.2
7	3 13 45.23	0.073	15 27 24.4	0.85	16 9.3
8	3 13 43.27	0.091	15 27 3.3	0.91	16 5.3
9	3 13 40.88	0.108	15 26 40.6	0.98	16 1.4
10	3 13 38.07	0.126	15 26 16.3	1.05	15 57.4
11	3 13 34.83	−0.144	+15 25 50.4	−1.11	15 53.4
12	3 13 31.17	0.162	15 25 22.9	1.18	15 49.4
13	3 13 27.08	0.179	15 24 53.8	1.24	15 45.4
14	3 13 22.57	0.197	15 24 23.2	1.31	15 41.4
15	3 13 17.64	0.214	15 23 51.0	1.37	15 37.4
16	3 13 12.29	−0.232	+15 23 17.2	−1.44	15 33.3
17	3 13 6.52	0.249	15 22 41.9	1.50	15 29.3
18	3 13 0.34	0.266	15 22 5.0	1.57	15 25.2
19	3 12 53.74	0.284	15 21 26.6	1.63	15 21.2
20	3 12 46.73	0.301	15 20 46.7	1.69	15 17.2
21	3 12 39.32	−0.318	+15 20 5.3	−1.76	15 13.1
22	3 12 31.50	0.334	15 19 22.5	1.82	15 9.0
23	3 12 23.28	0.351	15 18 38.2	1.88	15 5.0
24	3 12 14.66	0.367	15 17 52.4	1.94	15 0.9
25	3 12 5.65	0.384	15 17 5.2	2.00	14 56.8
26	3 11 56.25	−0.400	+15 16 16.6	−2.05	14 52.7
27	3 11 46.46	0.416	15 15 26.7	2.11	14 48.6
28	3 11 36.30	0.431	15 14 35.4	2.16	14 44.5
29	3 11 25.77	0.447	15 13 42.8	2.22	14 40.4
30	3 11 14.87	0.462	15 12 48.8	2.27	14 36.3
31	3 11 3.61	−0.477	+15 11 53.6	−2.33	14 32.2
32	3 10 51.99	−0.492	+15 10 57.1	−2.38	14 28.0

OCTOBER.

Day of Month.	Apparent Right Ascension.	Var. of R.A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	3 11 3.61	−0.477	+15 11 53.6	−2.33	14 32.2
2	3 10 51.99	0.492	15 10 57.1	2.38	14 28.0
3	3 10 40.02	0.506	15 9 59.4	2.43	14 23.9
4	3 10 27.71	0.520	15 9 0.6	2.48	14 19.8
5	3 10 15.06	0.534	15 8 0.5	2.53	14 15.6
6	3 10 2.08	−0.548	+15 6 59.2	−2.58	14 11.4
7	3 9 48.78	0.561	15 5 56.8	2.62	14 7.3
8	3 9 35.15	0.574	15 4 53.4	2.67	14 3.1
9	3 9 21.21	0.587	15 3 48.9	2.71	13 59.0
10	3 9 6.96	0.600	15 2 43.3	2.75	13 54.8
11	3 8 52.41	−0.612	+15 1 36.7	−2.80	13 50.6
12	3 8 37.57	0.624	15 0 29.1	2.84	13 46.4
13	3 8 22.45	0.636	14 59 20.6	2.88	13 42.3
14	3 8 7.04	0.648	14 58 11.1	2.92	13 38.1
15	3 7 51.36	0.659	14 57 0.7	2.95	13 33.9
16	3 7 35.42	−0.670	+14 55 49.4	−2.99	13 29.7
17	3 7 19.23	0.680	14 54 37.3	3.02	13 25.5
18	3 7 2.78	0.690	14 53 24.3	3.06	13 21.3
19	3 6 46.09	0.700	14 52 10.6	3.09	13 17.1
20	3 6 29.18	0.709	14 50 56.2	3.12	13 12.8
21	3 6 12.05	−0.718	+14 49 41.1	−3.14	13 8.6
22	3 5 54.70	0.727	14 48 25.4	3.17	13 4.4
23	3 5 37.16	0.735	14 47 9.1	3.19	13 0.2
24	3 5 19.43	0.743	14 45 52.2	3.22	12 56.0
25	3 5 1.52	0.750	14 44 34.7	3.24	12 51.7
26	3 4 43.44	−0.757	+14 43 16.8	−3.25	12 47.5
27	3 4 25.20	0.763	14 41 58.5	3.27	12 43.2
28	3 4 6.82	0.769	14 40 39.8	3.29	12 39.0
29	3 3 48.30	0.775	14 39 20.8	3.30	12 34.8
30	3 3 29.65	0.780	14 38 1.4	3.31	12 30.5
31	3 3 10.88	−0.784	+14 36 41.8	−3.32	12 26.3
32	3 2 52.00	−0.788	+14 35 22.0	−3.33	12 22.0

Day of the Month.	2d.	10th.	18th.	26th.
	″	″	″	″
Semidiameter	8.89	9.01	9.13	9.25
Horizontal Parallax . .	1.00	1.01	1.03	1.04

Day of the Month.	4th.	12th.	20th.	28th.
	″	″	″	″
Semidiameter	9.35	9.43	9.50	9.55
Horizontal Parallax . .	1.05	1.06	1.07	1.07

NOTE.—The sign + indicates north declinations; the sign — indicates south declinations.

GREENWICH MEAN TIME.

NOVEMBER.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	3 2 52.00	−0.788	+14 35 22.0	−3.33	12 22.0
2	3 2 33.03	0.792	14 34 2.1	3.34	12 17.8
3	3 2 13.97	0.796	14 32 42.0	3.34	12 13.6
4	3 1 54.84	0.799	14 31 21.8	3.34	12 9.3
5	3 1 35.65	0.801	14 30 1.6	3.34	12 5.0
6	3 1 16.40	−0.803	+14 28 41.4	−3.34	12 0.8
7	3 0 57.11	0.804	14 27 21.3	3.34	11 56.6
8	3 0 37.79	0.805	14 26 1.3	3.33	11 52.3
9	3 0 18.44	0.806	14 24 41.4	3.33	11 48.0
10	2 59 59.08	0.807	14 23 21.6	3.32	11 43.8
11	2 59 39.72	−0.807	+14 22 2.1	−3.31	11 39.5
12	2 59 20.36	0.806	14 20 42.9	3.30	11 35.3
13	2 59 1.02	0.805	14 19 24.0	3.28	11 31.0
14	2 58 41.71	0.804	14 18 5.4	3.26	11 26.8
15	2 58 22.44	0.802	14 16 47.3	3.25	11 22.5
16	2 58 3.23	−0.799	+14 15 29.6	−3.23	11 18.3
17	2 57 44.08	0.796	14 14 12.5	3.20	11 14.0
18	2 57 25.01	0.793	14 12 55.9	3.18	11 9.8
19	2 57 6.02	0.789	14 11 39.9	3.15	11 5.5
20	2 56 47.13	0.785	14 10 24.5	3.12	11 1.3
21	2 56 28.34	−0.780	+14 9 9.9	−3.09	10 57.1
22	2 56 9.68	0.775	14 7 56.0	3.06	10 52.8
23	2 55 51.15	0.769	14 6 43.0	3.03	10 48.6
24	2 55 32.77	0.763	14 5 30.8	2.99	10 44.4
25	2 55 14.53	0.757	14 4 19.5	2.95	10 40.1
26	2 54 56.45	−0.750	+14 3 9.1	−2.91	10 35.9
27	2 54 38.55	0.742	14 1 59.7	2.87	10 31.7
28	2 54 20.83	0.734	14 0 51.3	2.83	10 27.4
29	2 54 3.31	0.726	13 59 44.1	2.78	10 23.2
30	2 53 45.99	0.717	13 58 38.0	2.73	10 19.0
31	2 53 28.89	−0.708	+13 57 33.0	−2.68	10 14.8
32	2 53 12.01	−0.699	+13 56 29.2	−2.63	10 10.6

DECEMBER.

Day of Month.	Apparent Right Ascension.	Var. of R. A. for 1 Hour.	Apparent Declination.	Var. of Decl. for 1 Hour.	Meridian Passage.
	Noon.	*Noon.*	*Noon.*	*Noon.*	
	h m s	s	° ′ ″	″	h m
1	2 53 28.89	−0.708	+13 57 33.0	−2.68	10 14.8
2	2 53 12.01	0.699	13 56 29.2	2.63	10 10.6
3	2 52 55.35	0.689	13 55 26.6	2.58	10 6.4
4	2 52 38.93	0.679	13 54 25.3	2.53	10 2.2
5	2 52 22.76	0.668	13 53 25.4	2.47	9 58.0
6	2 52 6.84	−0.657	+13 52 26.8	−2.42	9 53.8
7	2 51 51.19	0.646	13 51 29.5	2.36	9 49.6
8	2 51 35.81	0.635	13 50 33.6	2.30	9 45.4
9	2 51 20.71	0.623	13 49 39.2	2.24	9 41.2
10	2 51 5.90	0.611	13 48 46.2	2.18	9 37.0
11	2 50 51.38	−0.599	+13 47 54.8	−2.11	9 32.9
12	2 50 37.16	0.586	13 47 4.9	2.05	9 28.7
13	2 50 23.25	0.573	13 46 16.5	1.98	9 24.5
14	2 50 9.66	0.560	13 45 29.8	1.91	9 20.4
15	2 49 56.40	0.546	13 44 44.7	1.84	9 16.2
16	2 49 43.47	−0.532	+13 44 1.3	−1.77	9 12.1
17	2 49 30.88	0.517	13 43 19.6	1.70	9 8.0
18	2 49 18.64	0.503	13 42 39.7	1.63	9 3.8
19	2 49 6.75	0.488	13 42 1.5	1.55	8 59.7
20	2 48 55.22	0.473	13 41 25.1	1.48	8 55.6
21	2 48 44.06	−0.457	+13 40 50.5	−1.40	8 51.4
22	2 48 33.27	0.442	13 40 17.8	1.32	8 47.3
23	2 48 22.87	0.426	13 39 46.9	1.25	8 43.2
24	2 48 12.85	0.410	13 39 17.9	1.17	8 39.1
25	2 48 3.21	0.393	13 38 50.9	1.09	8 35.0
26	2 47 53.96	−0.377	+13 38 25.8	−1.01	8 31.0
27	2 47 45.12	0.360	13 38 2.5	0.93	8 26.9
28	2 47 36.68	0.343	13 37 41.2	0.84	8 22.8
29	2 47 28.64	0.326	13 37 22.0	0.76	8 18.8
30	2 47 21.02	0.309	13 37 4.8	0.68	8 14.7
31	2 47 13.81	−0.292	+13 36 49.5	−0.60	8 10.7
32	2 47 7.01	−0.275	+13 36 36.2	−0.51	8 6.6

Day of the Month.	5th.	13th.	21st.	29th.
	″	″	″	″
Semidiameter	9.57	9.57	9.55	9.51
Horizontal Parallax	1.08	1.08	1.07	1.07

Day of the Month.	7th.	15th.	23d.	31st.	39th.
	″	″	″	″	″
Semidiameter	9.44	9.36	9.26	9.15	9.03
Horizontal Parallax	1.06	1.05	1.04	1.03	1.02

The sign + prefixed to the hourly change of declination indicates that north declinations are increasing or south declinations are decreasing. The sign − indicates that north declinations are decreasing or south declinations increasing.

MEAN PLACES FOR THE BEGINNING OF 1911.

Name of Star.	Magnitude.	Right Ascension.	Annual Variation.	Declination.	Annual Variation.
		h m s	s	° ′ ″	″
α Andromedæ	2	0 3 47.07	+ 3.095	+ 28 35 56.7	+ 19.88
β Cassiopeiæ	2.5	0 4 25.32	3.183	+ 58 39 32.1	19.86
γ Pegasi (*Algenib*)	3	0 8 39.08	3.086	+ 14 41 19.7	20.02
ι Ceti	3.5	0 14 53.62	3.057	− 9 19 2.0	19.97
β Hydri	3	0 21 5.41	3.206	− 77 45 19.8	20.28
α Cassiopeiæ (*var.*)	2.5	0 35 26.95	+ 3.385	+ 56 2 57.8	+ 19.78
β Ceti	2	0 39 7.37	3.013	− 18 28 29.6	19.80
γ Cassiopeiæ	2.5	0 51 19.65	3.595	+ 60 14 6.0	19.54
β Andromedæ	2	1 4 44.66	3.350	+ 35 8 56.1	19.13
θ¹ Ceti	3.5	1 19 34.46	2.998	− 8 38 32.5	18.64
α Ursæ Min. (*Polaris*)	2	1 27 23.36	+ 27.591	+ 88 49 52.2	+ 18.61
α Eridani (*Achernar*)	1	1 34 24.03	2.237	− 57 41 19.6	18.33
ζ Ceti	3.5	1 47 4.02	2.960	− 10 46 27.6	17.87
β Arietis	3	1 49 43.21	3.308	+ 20 22 24.0	17.68
γ Andromedæ	2	1 58 25.84	3.670	+ 41 54 11.2	17.38
α Arietis	2	2 2 9.17	+ 3.375	+ 23 2 31.3	+ 17.12
β Trianguli	3	2 4 14.60	3.560	+ 34 34 0.3	17.13
ι Cassiopeiæ	4.5	2 21 43.10	4.898	+ 67 0 10.5	16.34
γ Ceti	3.5	2 38 41.24	3.106	+ 2 51 40.3	15.28
α Ceti	2.5	2 57 37.52	3.133	+ 3 44 27.9	14.24
β Persei (*Algol*) (*var.*)	2.5	3 2 22.37	+ 3.892	+ 40 36 48.4	+ 14.02
α Persei	2	3 17 57.72	4.267	+ 49 32 42.6	12.99
ε Eridani	3.5	3 28 44.19	2.825	− 9 45 32.0	12.32
η Tauri	3	3 42 11.47	3.561	+ 23 49 50.0	11.29
ζ Persei	3	3 48 32.04	+ 3.765	+ 31 37 12.1	10.86
γ Hydri	3.5	3 48 36.31	− 0.970	− 74 30 42.9	+ 10.99
γ Eridani	3	3 53 52.60	+ 2.798	− 13 45 40.1	10.37
c Persei	4.5	4 2 11.76	4.346	+ 47 28 32.5	9.82
ε Tauri	3.5	4 23 25.08	3.500	+ 18 59 1.5	8.17
α Tauri (*Aldebaran*)	1	4 30 48.72	3.440	+ 16 19 51.9	7.42
ι Aurigæ	3	4 51 11.73	+ 3.903	+ 33 1 33.6	+ 5.91
β Eridani	3	5 3 28.45	2.949	− 5 12 2.9	4.82
α Aurigæ (*Capella*)	1	5 10 6.74	4.428	+ 45 54 30.4	3.90
β Orionis (*Rigel*)	1	5 10 15.60	2.882	− 8 18 13.7	4.32
β Tauri	2	5 20 39.89	3.791	+ 28 31 59.1	3.25
δ Orionis	2.5	5 27 27.55	+ 3.064	− 0 21 51.6	+ 2.83
α Leporis	2.5	5 28 48.28	2.646	− 17 53 7.5	2.72
ε Orionis	2	5 31 41.81	3.043	− 1 15 29.0	2.47
α Columbæ	2.5	5 36 25.57	2.172	− 34 7 16.1	2.02
κ Orionis	2.5	5 43 32.12	2.845	− 9 42 2.2	1.44
α Orionis (*var.*)	1	5 50 21.20	+ 3.248	+ 7 23 28.3	+ 0.85
β Aurigæ	2	5 53 0.05	4.402	+ 44 56 21.7	0.61
θ Aurigæ	3	5 53 39.14	4.092	+ 37 12 25.9	+ 0.46
η Geminorum	3.5	6 9 30.36	3.623	+ 22 32 0.1	− 0.85
μ Geminorum	3	6 17 34.60	3.631	+ 22 33 36.3	1.65
α Argûs (*Canopus*)	1	6 21 58.57	+ 1.332	− 52 38 48.6	− 1.91
γ Geminorum	2	6 32 34.26	3.467	+ 16 28 33.5	2.89
α Canis Majoris (*Sirius*)	1	6 41 13.57	2.644	− 16 35 36.6	4.79
ε Canis Majoris	1.5	6 55 7.67	2.357	− 28 51 1.4	4.77
δ Canis Majoris	2	7 4 46.30	+ 2.438	− 26 15 4.8	− 5.59

MEAN PLACES FOR THE BEGINNING OF 1911.

Name of Star.	Magnitude.	Right Ascension.	Annual Variation.	Declination.	Annual Variation.
		h m s	s	° ′ ″	″
δ Geminorum	3·5	7 14 48·57	+ 3·587	+ 22 8 49·1	− 6·44
β Canis Minoris	3	7 22 19·52	3·256	+ 8 28 9·6	7·09
α^2 Geminorum (*Castor*)	2	7 28 55·40	3·834	+ 32 5 5·2	7·67
α Canis Minoris (*Procyon*)	1	7 34 38·62	3·142	+ 5 27 12·9	9·08
β Geminorum (*Pollux*)	1	7 39 52·31	3·676	+ 28 14 30·8	8·52
15 Argûs (ρ)	3	8 3 45·21	+ 2·555	− 24 2 49·6	− 10·25
30 Monocerotis	4	8 21 12·87	3·000	− 3 36 55·7	11·60
ε Hydræ	3·5	8 42 3·86	3·180	+ 6 44 45·4	13·07
ι Ursæ Majoris	3·5	8 53 7·22	4·124	+ 48 23 30·3	13·99
β Argûs	2	9 12 13·64	0·671	− 69 21 1·9	14·82
ι Argûs	2·5	9 14 42·37	+ 1·604	− 58 54 5·2	− 15·05
α Hydræ	2	9 23 12·86	2·949	− 8 16 20·4	15·50
θ Ursæ Majoris	3	9 26 54·73	4·033	+ 52 5 0·8	16·28
ε Leonis	3	9 40 48·13	3·412	+ 24 11 4·0	16·48
α Leonis (*Regulus*)	1·5	10 3 38·03	3·199	+ 12 24 9·2	17·52
γ^2 Leonis	2·5	10 15 4·07	+ 3·312	+ 20 17 31·5	− 18·13
ρ Leonis	4	10 28 7·59	3·162	+ 9 45 53·7	18·46
46 Leonis Minoris	4	10 48 20·29	3·364	+ 34 41 41·9	19·36
α Ursæ Majoris	2	10 58 14·76	3·732	+ 62 13 54·1	19·39
δ Leonis	2·5	11 9 22·65	3·196	+ 21 0 41·2	19·70
δ Crateris	4	11 14 53·39	+ 2·997	− 14 17 48·4	− 19·46
λ Draconis	4	11 26 8·04	3·601	+ 69 49 20·6	19·85
β Leonis	2	11 44 31·28	3·063	+ 15 4 10·6	20·12
γ Ursæ Majoris	2·5	11 49 9·33	3·172	+ 54 11 22·6	20·02
ε Corvi	3	12 5 32·72	3·081	− 22 7 29·4	20·04
γ Corvi	2·5	12 11 13·62	+ 3·081	− 17 2 51·8	− 20·00
η Virginis	4	12 15 21·15	3·069	− 0 10 20·1	20·03
α^1 Crucis	1	12 21 38·31	3·309	− 62 36 21·5	20·00
δ^2 Corvi	3	12 25 15·46	3·101	− 16 1 12·1	20·07
β Corvi	3	12 29 42·53	3·145	− 22 54 16·8	19·94
γ Virginis (*mean*)	3	12 37 9·05	+ 3·040	− 0 57 41·0	− 19·78
α Canum Venaticorum	3	12 51 51·99	2·811	+ 38 47 55·9	19·49
ε Virginis	3	12 57 44·80	2·986	+ 11 26 14·3	19·40
α Virginis (*Spica*)	1	13 20 30·15	3·157	− 10 41 49·1	18·85
ζ Virginis	3·5	13 30 9·41	3·054	− 0 8 28·0	18·48
η Ursæ Majoris	2	13 44 2·13	+ 2·368	+ 49 45 25·8	− 18·04
η Bootis	3	13 50 26·83	2·857	+ 18 50 36·7	18·13
β Centauri	1	13 57 32·00	4·202	− 59 56 38·6	17·50
α Draconis	3·5	14 1 58·81	1·624	+ 64 48 3·6	17·26
α Bootis (*Arcturus*)	1	14 11 36·09	2·735	+ 19 38 43·4	18·83
α^2 Centauri	1	14 33 32·73	+ 4·052	− 60 28 6·8	− 14·99
ε Bootis	2·5	14 41 6·01	2·620	+ 27 26 56·2	15·28
α^2 Libræ	3	14 45 57·13	+ 3·313	− 15 40 20·7	15·09
β Ursæ Minoris	2	14 50 57·29	− 0·210	+ 74 31 9·1	14·72
β Bootis	3·5	14 58 35·62	+ 2·260	+ 40 44 28·2	14·30
δ Bootis	3·5	15 11 54·89	+ 2·419	+ 33 38 46·8	− 13·54
β Libræ	3	15 12 12·94	+ 3·224	− 9 3 18·2	13·42
γ^2 Ursæ Minoris	3	15 20 51·76	− 0·119	+ 72 9 2·4	12·81
α Coronæ Borealis	2·5	15 30 55·16	+ 2·539	+ 27 0 49·2	12·24
α Serpentis	2·5	15 39 52·98	+ 2·953	+ 6 42 18·2	− 11·46

MEAN PLACES FOR THE BEGINNING OF 1911.

Name of Star.	Magnitude.	Right Ascension.	Annual Variation.	Declination.	Annual Variation.
		h m s	s	° ′ ″	″
ε Serpentis	3·5	15 46 22·70	+ 2·988	+ 4 44 42·6	− 10·97
δ Scorpii	2·5	15 55 4·08	3·542	− 22 22 8·7	10·43
β^1 Scorpii	3	16 0 15·54	3·483	− 19 33 44·9	10·03
δ Ophiuchi	3	16 9 40·81	3·141	− 3 27 56·7	9·42
τ Herculis	4	16 17 3·94	1·803	+ 46 31 29·5	8·67
η Draconis	3	16 22 47·04	+ 0·807	+ 61 42 55·6	− 8·19
α Scorpii (*Antares*)	1	16 23 56·88	3·674	− 26 14 6·7	8·19
β Herculis	3	16 26 23·57	2·577	+ 21 40 58·4	7·99
ζ Ophiuchi	3	16 32 15·39	3·300	− 10 23 15·0	7·47
α Trianguli Australis	2	16 39 13·82	6·320	− 68 51 55·8	6·97
κ Ophiuchi	3·5	16 53 27·29	+ 2·838	+ 9 30 45·8	− 5·75
η Ophiuchi	2·5	17 5 16·33	3·437	− 15 36 55·4	4·65
π Herculis	3·5	17 11 56·78	2·088	+ 36 54 32·1	4·17
θ Ophiuchi	3·5	17 16 32·53	3·682	− 24 54 41·3	3·81
β Draconis	3	17 28 25·27	1·354	+ 52 22 0·9	2·74
α Ophiuchi	2	17 30 48·16	+ 2·784	+ 12 37 26·8	− 2·78
μ Herculis	3·5	17 42 58·49	2·347	+ 27 46 19·8	2·24
γ Draconis	2·5	17 54 32·36	1·392	+ 51 29 56·3	− 0·50
η Serpentis	3·5	18 16 42·23	3·103	− 2 55 21·1	+ 0·77
λ Sagittarii	3	18 22 28·70	3·703	− 25 28 18·3	1·76
α Lyræ (*Vega*)	1	18 33 55·51	+ 2·031	+ 38 42 1·1	+ 3·24
σ Sagittarii	2·5	18 49 44·79	3·720	− 26 24 29·2	4·24
ζ Aquilæ	3	19 1 19·16	2·757	+ 13 43 49·8	5·20
δ Draconis	3	19 12 32·28	0·023	+ 67 30 17·9	6·33
β Cygni	3	19 27 7·91	2·419	+ 27 46 19·8	7·43
γ Aquilæ	3	19 42 1·71	+ 2·852	+ 10 23 44·6	+ 8·63
δ Cygni	3	19 42 11·64	1·876	+ 44 54 47·1	8·69
α Aquilæ (*Altair*)	1	19 46 26·46	2·927	+ 8 37 57·4	9·36
θ Aquilæ	3·5	20 6 42·80	3·096	− 1 5 9·7	10·53
α^2 Capricorni	3·5	20 13 7·06	3·331	− 12 49 16·7	11·01
α Pavonis	2	20 18 36·75	+ 4·767	− 57 1 15·8	+ 11·31
γ Cygni	2·5	20 19 2·03	2·153	+ 39 58 16·8	11·43
β Pavonis	3·5	20 36 57·02	5·448	− 66 31 26·1	12·68
α Cygni	1·5	20 38 23·85	2·045	+ 44 57 42·7	12·78
ε Cygni	2·5	20 42 36·60	2·427	+ 33 38 11·1	13·39
ν Cygni	4	20 53 51·28	+ 2·235	+ 40 49 26·5	+ 13·77
ζ Cygni	3·5	21 9 8·86	2·552	+ 29 51 41·0	14·67
α Cephei	2·5	21 16 27·41	1·435	+ 62 12 29·7	15·20
β Aquarii	3	21 26 52·48	3·160	− 5 57 47·5	15·72
β Cephei	3·5	21 27 31·01	0·787	+ 70 10 11·6	15·78
ε Pegasi	2·5	21 39 48·88	+ 2·946	+ 9 27 59·5	+ 16·41
α Aquarii	3	22 1 12·80	3·082	− 0 45 9·1	17·41
α Gruis	2	22 2 37·71	3·796	− 47 23 33·3	17·30
γ Aquarii	4	22 17 3·59	3·099	− 1 50 9·7	18·07
ζ Pegasi	3·5	22 37 1·38	2·991	+ 10 21 59·2	18·73
ι Cephei	3·5	22 46 30·54	+ 2·127	+ 65 43 55·6	+ 18·90
α Pis. Aust. (*Fomalhaut*)	1·5	22 52 44·12	3·322	− 30 5 39·1	19·02
α Pegasi (*Markab*)	2·5	23 0 19·58	2·986	+ 14 43 34·4	19·33
λ Andromedæ	4	23 33 12·26	2·927	+ 45 58 33·3	19·49
ω Piscium	4	23 54 44·42	+ 3·079	+ 6 22 14·3	+ 19·93

ECLIPSES IN 1911.

In the year 1911 there will be two eclipses, both of the Sun.

I.—*A Total Eclipse of the Sun*, 1911, April 28, visible at Washington as a small partial eclipse, the Sun setting eclipsed.

ELEMENTS OF THE ECLIPSE.

Greenwich mean time of ☌ in right ascension, April 28 10h 16m 25.3s

Sun and Moon's R. A.	2h 20m 32.79s		Hourly motions	9.47s	and 139.53″
Sun's declination	14° 1′ 8.8″ N.		Hourly motion	0′ 47.5″	N.
Moon's declination	13° 45′ 54.2″ N.		Hourly motion	15′ 16.9″	N.
Sun's equa. hor. parallax	8.7″		Sun's true semidiameter	15′ 52.8″	
Moon's equa. hor. parallax	60′ 32.4″		Moon's true semidiameter	16′ 29.0″	

CIRCUMSTANCES OF THE ECLIPSE.

	Greenwich Mean Time.	Longitude from Greenwich.	Latitude.
	d h m	° ′	° ′
Eclipse begins	April 28 7 49.1	161 10.5 E.	32 19.3 S.
Central eclipse begins	28 8 46.0	148 37.3 E.	36 47.9 S.
Central eclipse at local apparent noon	28 10 16.4	154 43.8 W.	0 36.3 S.
Central eclipse ends	28 12 8.9	90 2.3 W.	11 5.9 N.
Eclipse ends	28 13 5.7	103 2.4 W.	15 38.5 N.

II.—*An Annular Eclipse of the Sun*, 1911, October 21, invisible at Washington.

ELEMENTS OF THE ECLIPSE.

Greenwich mean time of ☌ in right ascension, October 21d 15h 54m 33.6s

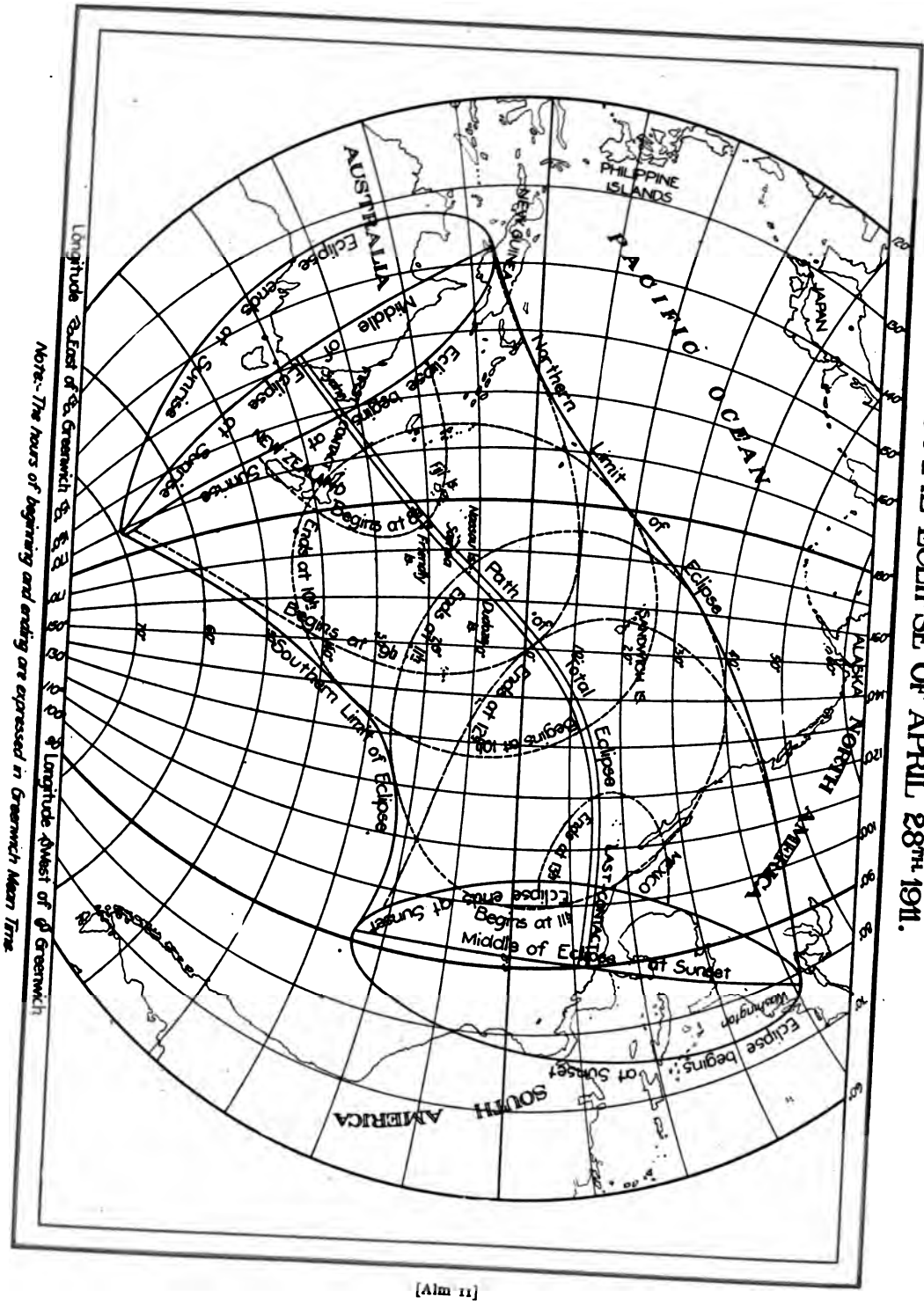
Sun and Moon's R. A.	13h 42m 36.42s		Hourly motions	9.46s	and 116.57″
Sun's declination	10° 38′ 11.8″ S.		Hourly motion	0′ 53.6″	S.
Moon's declination	10° 18′ 1.4″ S.		Hourly motion	14′ 10.1″	S.
Sun's equa. hor. parallax	8.8″		Sun's true semidiameter	16′ 4.4″	
Moon's equa. hor. parallax	56′ 5.1″		Moon's true semidiameter	15′ 16.2″	

CIRCUMSTANCES OF THE ECLIPSE.

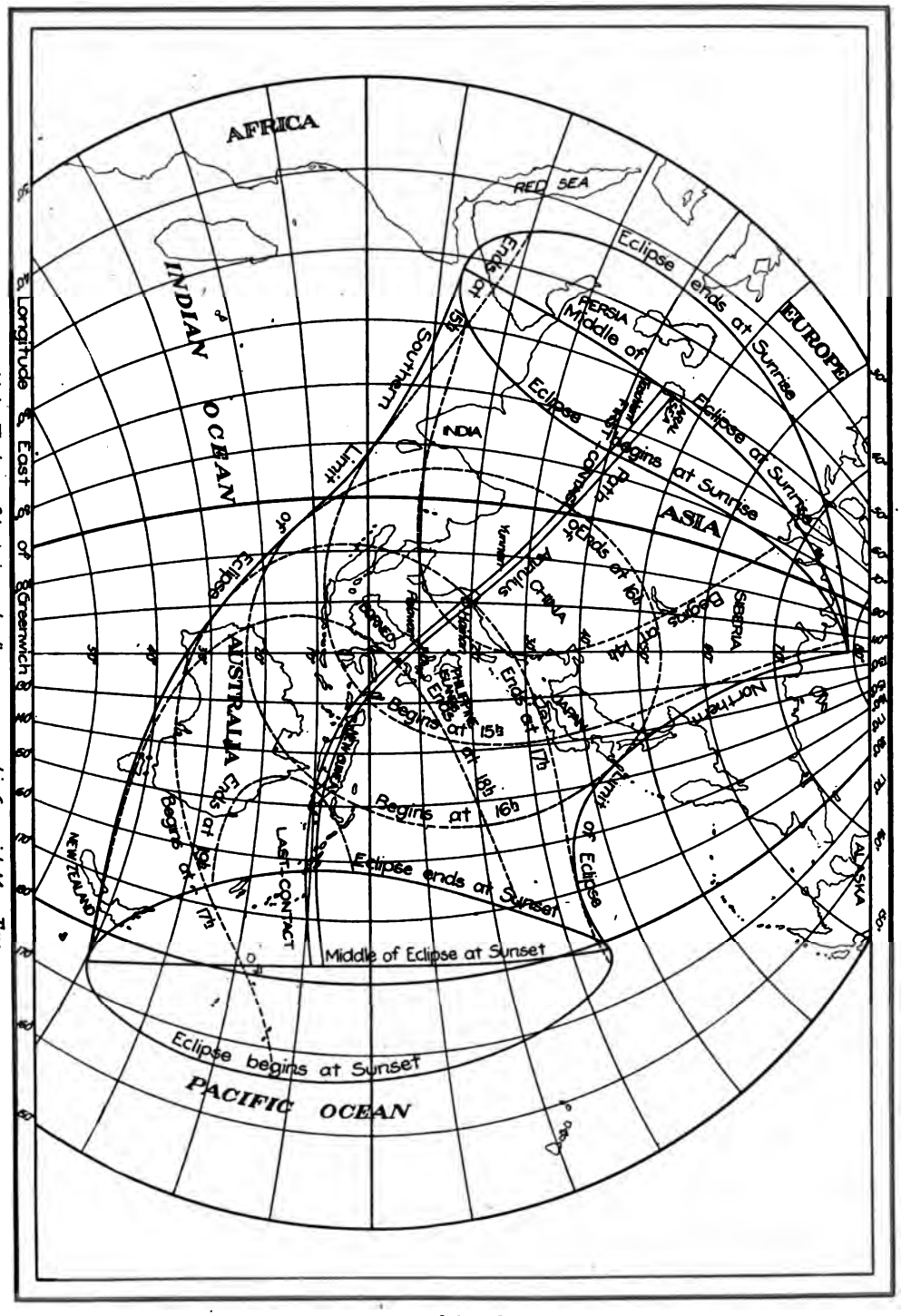
	Greenwich Mean Time.	Longitude from Greenwich.	Latitude.
	d h m	° ′	° ′
Eclipse begins	October 21 13 19.5	74 44.7 E.	38 4.1 N.
Central eclipse begins	21 14 25.5	60 31.1 E.	44 44.8 N.
Central eclipse at local apparent noon	21 15 54.6	117 32.7 E.	10 34.5 N.
Central eclipse ends	21 18 0.7	177 29.0 E.	7 50.2 S.
Eclipse ends	21 19 6.7	162 18.5 E.	14 37.5 S.

The regions within which these eclipses are visible are laid down on the accompanying charts, from which, by means of the dotted lines, the Greenwich times of beginning and ending at any place may be found with an uncertainty which will vary from three or four minutes for a high Sun to fifteen or twenty minutes when the Sun is near the horizon.

TOTAL ECLIPSE OF APRIL 28TH, 1911.



ANNULAR ECLIPSE OF OCTOBER 21ST 1911.



Note:- The hours of beginning and ending are expressed in Greenwich Mean Time.

EXPLANATION

ON THE ARRANGEMENT AND USE OF THE AMERICAN NAUTICAL ALMANAC.

THIS abridgment of *The American Ephemeris and Nautical Almanac* is designed for the special use of navigators, and is adapted to the meridian of Greenwich. It contains the ephemerides of the Sun and Moon; the distances of the Moon from the center of the Sun, from the centers of the four most conspicuous planets, and from certain fixed stars; the ephemerides of the planets Mercury, Venus, Mars, Jupiter, and Saturn; the mean places of one hundred and fifty fixed stars for the beginning of the year 1911, and the elements of the solar and lunar eclipses which occur during the year.

TIME.

Astronomers make use of three different kinds of time, namely: First, true or apparent solar time; second, mean solar time; third, sidereal time.

True or Apparent Solar Time.—This species of time is called indiscriminately either true solar time or apparent solar time, and is measured by the motion of the true Sun; the length of the day being the interval between two successive transits of the Sun over the same meridian, and the time of day being always the hour angle of the Sun from the meridian. This is the most obvious and natural measure of time, but, owing to the obliquity of the ecliptic and the varying motion of the Earth in its orbit, the intervals between successive returns of the Sun to the same meridian are not exactly equal, and consequently ordinary clocks and chronometers can not be regulated to true solar time.

Mean Solar Time.—To avoid the irregularity which would arise from using the true solar day, astronomers have recourse to a mean solar day, whose length is equal to the average of all the true solar days in a year. Just as the true solar day depends upon the motion of the true Sun, so the mean solar day is made to depend upon the motion of an imaginary mean Sun which moves along the equator at a perfectly uniform rate, and whose hour angle from any given meridian is always the mean solar time thereat. Ordinary clocks and watches and the chronometers used by navigators are regulated to this species of time.

Equation of Time.—The imaginary mean Sun is supposed to keep as near the true Sun as is consistent with perfect uniformity of motion, but it is sometimes before and sometimes behind the latter, the greatest difference amounting to rather more than one-quarter of an hour. The interval between the true Sun and the imaginary mean Sun is the equation of time, given on pages I and II of the Ephemeris for the meridian of Greenwich, and a knowledge of it is necessary for converting true solar time into mean solar time, or *vice versa*. As the mean Sun is an imaginary body, mean solar time can not be directly observed, but it can be got either from observations of the true Sun by applying to them the correction for the equation of time, or from observations of the stars by means of the sidereal time of mean noon, given on page II of the Ephemeris for the meridian of Greenwich.

Sidereal Time.—Sidereal time is measured, roughly speaking, by the daily motion of the stars; or in strict accuracy, by the daily motion of that point in the equator from which the true right ascensions of the stars are counted. The point in question is the vernal equinox, and its hour angle is always the sidereal time. Astronomical clocks are usually regulated to sidereal time, and are then called sidereal clocks.

Sidereal Day.—A sidereal day is the interval between two successive transits of the

vernal equinox over the same meridian. It is $3^m\ 55^s.909$ of mean solar time shorter than the mean solar day, the tropical year of 365.2422 solar days being divided into 366.2422 sidereal days, each comprising 24 sidereal hours. The sidereal hours are counted from 0 to 24, commencing with the instant of the passage of the true vernal equinox over the upper meridian, and ending with its return to the same meridian. About March 23 of each year the sidereal clock agrees with the mean-time or ordinary clock, and the former gains on the latter $3^m\ 56^s.555$ of sidereal time per day, so that at the end of a year it will have gained an entire day, and will again agree with the mean-time clock.

Civil Day.—According to the customs of society, the civil day commences at midnight, and comprises twenty-four hours, which extend to the next following midnight. The hours are counted from 0 to 12 in two series; the first, marked A. M., running from midnight to noon, and the second, marked P. M., running from noon to midnight.

Astronomical Day.—The astronomical day begins at noon on the civil day of the same date. It also comprises twenty-four hours, but they are reckoned from 0 to 24, and run from the noon of one day to that of the next following. Astronomical time as well as civil time may be either apparent or mean, according as it is reckoned from apparent noon or from mean noon.

The civil day begins twelve hours before the astronomical day; therefore the first half of the civil day corresponds to the last half of the preceding astronomical day, and the last half of the civil day coincides with the first half of the astronomical day of the same date. Thus, January 9, 2 o'clock, A. M., civil time, is January 8, 14^h, astronomical time; and January 9, 2 o'clock, P. M., civil time, is also January 9, 2^h, astronomical time. Hence, we have the following rules:

To convert Civil Time into Astronomical Time.—If the civil time is marked A. M., take one from the day and add twelve to the hours, and the result will be the corresponding astronomical time; if the civil time is marked P. M., take away the designation P. M., and the astronomical time will result.

To convert Astronomical Time into Civil Time.—If the astronomical time is less than twelve hours, simply write P. M. after it. If greater than twelve hours, subtract twelve hours from it, mark the result A. M., and add one to the days. For example, October 3, 23 hours, astronomical time, is October 4, 11 o'clock, A. M., civil time.

To find Greenwich Time.—Express the longitude from Greenwich in time, and when west, add it to the local time, or when east, subtract it from the local time. The result will be the corresponding Greenwich time; mean or sidereal, according as the local time employed is mean or sidereal. For use with the Almanac, Greenwich mean time is ordinarily required.

THE CALENDAR FOR THE MERIDIAN OF GREENWICH.

The Calendar is divided into twelve months, and to each month are assigned eighteen pages, numbered from I to XVIII, whose contents are as follows:

Page I contains, for Greenwich apparent noon of each day, *The Sun's Apparent Right Ascension* and *Declination*, and the *Equation of Time*. Adjoining columns contain the differences of these quantities for one hour. By multiplying any one of these differences by the hours and parts of an hour from Greenwich apparent noon, and adding the product to, or subtracting it from, the corresponding quantity at noon, according as that quantity is increasing or decreasing, we obtain the value of the quantity in question for any given Greenwich apparent time. The hourly differences are given for the instant of apparent noon at Greenwich, but, when great accuracy is required, they should be interpolated for half the hours and parts of an hour of the Greenwich apparent time.

The *Equation of Time* given on page I is the mean time of apparent noon, or the hour

angle of the mean Sun at that instant. The heading of the column directs how the equation is to be applied to apparent time, or the time given by an observation of the Sun, in order to get mean time. When in the course of the month there is a change from addition to subtraction or the reverse (as in the months of April and June), the two different directions are separated by a line, while a corresponding line below points out the dates between which the change occurs.

The Sun's Semidiameter and the *Sidereal Time of Semidiameter Passing Meridian* are also given on page I. The semidiameter is used in reducing the altitude of the upper or lower limb of the Sun to the altitude of the center; and in reducing the angular distance between the limb of the Sun and any other object, to the distance from the center of the Sun. The sidereal time of semidiameter passing the meridian is employed in obtaining the passage of the Sun's center over the wires of a transit instrument, when the passage of one limb only has been observed. The quantity found in this column is to be added to the time of transit of the first, or western, limb; and to be subtracted from the time of transit of the second, or eastern, limb.

This page is chiefly used when the Sun is observed on the meridian, at which instant the local apparent time is $0^h\ 0^m\ 0^s$. The longitude from Greenwich expressed in time is then the corresponding Greenwich apparent time, before or after noon according as the longitude is east or west. The longitude of any place is therefore the factor employed in reducing the quantities on this page to apparent noon at that place.

The right ascension of the Sun thus reduced is the sidereal time of local apparent noon, and the difference between that and the clock time of the meridian passage of the Sun is the error of the clock on sidereal time.

The declination of the Sun reduced to the meridian, or apparent noon, of the place, is required in finding the latitude from a meridian altitude of the Sun.

As an example of the use of page I:—

Let the Sun's declination be required at apparent noon, 1911, April 15, at a place whose longitude is 89° 40′, or $5^h\ 58^m\ 40^s$ west from Greenwich:—

		h m s
Local apparent time	April 15,	0 0 0
Longitude from Greenwich (additive)		5 58 40
Greenwich apparent time	April 15,	5 58 40

Reducing the minutes and seconds to decimals of an hour, we find that this moment is $5^h.978$ after Greenwich apparent noon on April 15, or $18^h.022$ before Greenwich apparent noon on April 16.

On page 56 of the Almanac we find that the change of declination in one hour is:

	″
April 15, at Greenwich apparent noon	+ 53.91
April 16, at Greenwich apparent noon	+ 53.51
Difference for one day	− 0.40

If great exactness is desired, we find the amount of this hourly difference for the time which is halfway between Greenwich noon and the time of observation; that is, for 3 hours after Greenwich noon of the 15th, this being half of 6 hours. Three hours is 0.125 of a day; so the calculation is as follows:

	″
Difference for one hour, April 15	+ 53.91
Change for 0.125 of a day or $-\ 0''.40 \times 0.125$	− .05
Difference at 3 hours after noon	53.86
$53''.86 \times 5.978 = 322''.0 = 5'\ 22''.0$	

	° ′ ″
Declination at Greenwich noon, April 15	N. 9 27 45.9
Change in 5.978 hours (additive)	5 22.0
Sun's declination at time of observation	N. 9 33 7.9

When the time of observation is not too far from the succeeding Greenwich noon, we may count the longitude backward from this noon. Thus, in the example just given, the time is $18^h.022$ before Greenwich noon of April 16; half this interval is about 0.375 of a day, and the hourly motion for the middle of the interval is $53''.66$. Then, we find—

	° ′ ″
Declination at Greenwich noon, April 16 . . .	N. 9 49 15.0
Product of $53''.66 \times 18.022 = 967''.1$ (subtractive) . .	— 16 7.1
Sun's declination at time of observation . . .	N. 9 33 7.9

It will always be well to make the calculation in both ways, as a check; but if the results differ slightly, the one derived from the nearest noon should be regarded as the more accurate. At sea, however, it is ordinarily sufficient to compute the declination to the nearest half minute, and the reduction may then be found by Table 12 of BOWDITCH's *American Practical Navigator.*

Page II contains, for Greenwich mean noon of each day, *The Sun's Apparent Right Ascension* and *Declination*, the *Equation of Time*, and the *Sidereal Time of Mean Noon.* The hourly changes of these quantities are also given, and may be used in reducing them for the longitude, or to any Greenwich mean time. When great precision is required, these changes should be interpolated for half the Greenwich time, as described in explaining the calculation of the declination.

The *Equation of Time* given on page II is the apparent time of mean noon, and is equivalent to the hour angle of the true Sun at the instant of mean noon. The heading of the column directs how the equation must be applied to mean time in order to obtain apparent time.

The *Sidereal Time of Mean Noon* is the right ascension of the mean Sun at Greenwich mean noon. It may be reduced for the longitude, or to any Greenwich mean time, by using the hourly difference, $9^s.8565$; or by Table III appended to this volume, for reducing intervals of mean solar to sidereal time; or by Table 9 of BOWDITCH's *Navigator.*

The right ascensions and declinations on pages I and II are affected both by aberration and nutation, and therefore denote the *apparent* positions of the *true* Sun. Page I is used for observations which depend upon apparent time, as when the Sun is observed on the meridian; while page II is used when the times have been noted by a clock or chronometer regulated to mean time, as is the case in most observations of the Sun out of the meridian.

The Sun's declination is required whenever that body is observed for the purpose of finding latitude, local time, or azimuth, and the equation of time is needed in finding the apparent time when determining the latitude from observations of the Sun out of the meridian.

The sidereal time of mean noon, or right ascension of the mean Sun, is useful in converting mean time to sidereal time. We first find the Greenwich mean time, then the right ascension of the mean Sun for that time, and this being added to the local astronomical mean time will give the sidereal time.

The sidereal time of mean noon, reduced for the longitude of the place, is also used in converting sidereal time to mean time. Subtracting the reduced value from the given sidereal time gives the interval of sidereal time from noon, and that is converted into the required mean time by subtracting from it the corresponding reduction of a sidereal interval to a mean-time interval, taken from Table II appended to this volume, or from Table 8 of BOWDITCH's *Navigator.* Instead of using Table II, this reduction may be found by multiplying $9^s.8296$ by the hours and parts of an hour of the sidereal interval from noon.

As examples of the use of page II:—

1.—Let the Sun's right ascension and the equation of time be required for 1911, July 13, $10^h\ 3^m\ 30^s$, A. M., mean time, at a place whose longitude is 85° 15′, or $5^h\ 41^m\ 0^s$, west of Greenwich.

		h m s
Local astronomical mean time	July 12,	22 3 30
Longitude from Greenwich (additive)		5 41 0
Greenwich mean time	July 13,	3 44 30 = $3^h.7417$

Sun's Right Ascension.

	h m s
July 13, Greenwich noon	7 26 23.77
H. D. $10^s.168 \times 3.7417$	+ 38.05
	7 27 1.82

Equation of Time.

	m s
July 13, Greenwich noon	5 23.88 (subtractive)
H. D. $+0^s.312 \times 3.7417$	+ 1.17
	5 25.05

In this case the hourly differences interpolated to half the interval, or $1^h.87$ after noon, have been used. The equation of time is here subtractive from mean time. Its reduction could have been found by Table 12 of BOWDITCH'S *Navigator*.

2.—If the sidereal time is required for the same date and time, we have—

	h m s
July 13, sidereal time (at Greenwich mean noon)	7 20 59.90
Reduction for $3^h\ 44^m\ 30^s$ from Table III, or $9^s.8565 \times 3.7417$	+ 36.88
Add the local astronomical mean time	22 3 30.00
The required sidereal time is (rejecting 24^h)	5 25 6.78

The reduction $36^s.88$ could have been found in Table III corresponding to the Greenwich mean time $3^h\ 44^m\ 30^s$, or by Table 9 of BOWDITCH'S *Navigator*.

3.—On 1911, July 13, A. M., at a place whose longitude is 85° 15′ W., suppose the sidereal time to be $4^h\ 25^m\ 3^s.60$, and that the corresponding mean time is required.

The astronomical day is July 12; the longitude in time, $+ 5^h\ 41^m\ 0^s$, or $+ 5^h.683$.

		h m s
July 12, sidereal time (at Greenwich mean noon)		7 17 3.34
Reduction for $5^h\ 41^m\ 0^s$ from Table III, or $9^s.8565 \times 5.683$		+ 56.02
The sidereal time of local mean noon		7 17 59.36
The given sidereal time ($+ 24^h$, if necessary for the following subtraction)		28 25 3.60
Subtracting the first from the second gives the sidereal interval from noon		21 7 4.24 = $21^h.1178$
Reduction for $21^h\ 7^m\ 4^s.24$ from Table II, or $-9^s.8296 \times 21.1178$		− 3 27.58
The required astronomical mean time is	July 12,	21 3 36.66

Page III contains, for Greenwich mean noon of each day, *The Sun's True Longitude* and *Latitude*, and the *Logarithm of the Radius Vector of the Earth.* The longitudes of the Sun are the true geometric longitudes, not corrected for aberration. They are given in two columns, headed respectively λ and λ'; λ representing the Sun's longitude counted from the true equinox of the date; and λ', the same co-ordinate counted from the mean equinox of the beginning of the Besselian fictitious year. The latitude is referred to the mean ecliptic of the date. Columns of hourly differences are given to facilitate finding the Sun's longitude, or the logarithm of the radius vector, for any hour from noon.

The last column on page III contains the *Mean Time of Sidereal Noon;* that is, the number of hours, minutes, and seconds after Greenwich mean noon when the vernal equinox passes the meridian of Greenwich. It may be reduced to any meridian, or to any Greenwich sidereal time, by using the hourly difference, $-9^s.8296$, to effect the necessary interpolation. The reduction, however, can be taken directly from Table II for reducing intervals of sidereal time to mean solar time, or from Table 8 of BOWDITCH'S *Navigator*.

This column may be used in converting sidereal time to mean time, instead of that on page II. As an illustration, let us take Example 3, above.

It is seen in advance that the sum of the mean time of sidereal noon and the given

sidereal time is less than 24 hours. Were it more than 24 hours, the mean time of sidereal noon should be taken out for July 11; that is, the preceding astronomical day.

		h	m	s	
July 12, the mean time of Greenwich sidereal noon is		16	40	12.36	
Reduction for longitude from Table II, or $-9^s.8296 \times 5.683$			—	55.86	
The mean time of local sidereal noon		16	39	16.50	
Add the given sidereal time		4	25	3.60	$= 4^h.4177$
The sum is		21	4	20.10	
Reduction for $4^h\ 25^m\ 3^s.60$ from Table II, or $-9^s.8296 \times 4.4177$			—	43.42	
The required astronomical mean time	July 12,	21	3	36.68	

Page IV contains *The Moon's Semidiameter* and *Equatorial Horizontal Parallax*, for each mean noon and midnight at Greenwich. Columns adjoining those of the horizontal parallax give the change of that quantity in one hour, by means of which it can be reduced to any other Greenwich mean time, in the same way as the Sun's declination and the equation of time in the preceding examples. The sign plus or minus is prefixed to the hourly differences, according as the horizontal parallax is increasing or decreasing.

The reduction of the Moon's semidiameter may be readily found by multiplying the reduction of the horizontal parallax by 0.273, or by simply computing the proportional part.

If, for example, the semidiameter of the Moon is to be taken out for 1911, March 10, 7^h, P. M., Greenwich mean time, we see that the difference of the semidiameters at noon and midnight of March 10 is $2''.4$; then,

$$12^h : 7^h = 2''.4 : 1''.4,$$

which is the correction to be subtracted from the semidiameter at noon, because the semidiameter is decreasing. The Moon's semidiameter for March 10, 7^h, is therefore $16'\ 0''.4$.

The Moon's semidiameter and horizontal parallax are required for all observations of the Moon. When great precision is needed, the hourly differences should be interpolated for half the interval of Greenwich time from noon or midnight, and the horizontal parallax should be corrected for the latitude of the place of observation.

The *Mean Time of the Moon's Upper Transit at Greenwich* and the *Age of the Moon* are also contained on page IV. The time of transit is given to tenths of a minute, and is accompanied by a column of differences for one hour of longitude, by means of which the local time of the Moon's meridian transit may be computed for any other place whose longitude is known. Table 11 of BOWDITCH'S *Navigator* furnishes the necessary reduction by simple inspection. The age of the Moon, or the time elapsed since the preceding new Moon, is given to tenths of a day.

Pages V–XII contain *The Moon's Right Ascension* and *Declination* for each day and hour of Greenwich mean time. They are accompanied by columns of differences for one minute, which are also given at each hour. The Greenwich mean time, which is required for taking out these quantities, may either be taken from a well-regulated chronometer, or may be obtained by applying the longitude, converted into time, to the local mean time of the observer. The right ascension or declination is taken out for the given day and hour of Greenwich mean time; the *Diff. for 1 Minute* is multiplied by the minutes and parts of a minute of the Greenwich time, and the product is added to or subtracted from the quantity, according as the latter is increasing or decreasing.

Thus, suppose the Moon's right ascension and declination are required for 1911, April 27, $10^h\ 10^m\ 30^s$, astronomical mean time at Greenwich:—

Right Ascension.	h	m	s	*Declination.*	°	′	″
April 27, 10^h	1	25	49.97		N. 7	18	22.1
Diff. 2.1897×10.5			22.99	$+16.447 \times 10.5$	+ 2	52.7	
April 27, $10^h\ 10^m\ 30^s$	1	26	12.96		N. 7	21	14.8

For the sake of precision, the differences here employed have been interpolated for $5^m.2 = 0^h.09$.

Page XII contains also the *Phases of the Moon* and the dates of the *Moon's Perigee and Apogee*, or least and greatest distances from the Earth.

Pages XIII–XVIII contain the *Lunar Distances*, or the angular distances of the center of the Moon from the center of the Sun, from the centers of the four brighter planets, and from certain fixed stars, as they would appear to an observer at the center of the Earth. They are given for every third hour of Greenwich mean time, and as the reckoning begins at noon, the dates are astronomical. All the distances which can be observed on the same day are grouped together under that date, and the columns are read from left to right, across both pages of the same opening. The letter W. or E. is affixed to the name of the Sun, planet, or star, to indicate whether it is on the west or east side of the Moon.

An observer on the Earth's surface by measuring a lunar distance, correcting it for errors of his instrument and for the semidiameters of the objects, and clearing it from the effects of refraction and parallax, finds the true or geocentric distance; that is, the distance as it would have appeared from the center of the Earth at the moment of observation. By comparing this distance with the corresponding distances given in the Almanac, the Greenwich mean time of the observation can be derived.

To lessen the labor of computation, the Almanac contains, between every two successive distances, the logarithm of the seconds of time in which the distance changes one second of arc; or, as it is usually called, the *Proportional Logarithm of the Difference.* It is given for the middle instant of the two hours between which it is placed.

For computing the Greenwich time corresponding to a given lunar distance we have the following rule:

Find in the Almanac the two distances between which the true distance falls; take out the nearer of these, the hours of Greenwich time over it, and the P. L. of Diff. between them.

Find the difference between the true distance and the distance taken from the Almanac; and from the proportional logarithm of this difference, as found in Table 45 of BOWDITCH'S *Navigator, subtract the P. L. of Diff. taken from the Almanac.*

The result will be the proportional logarithm of an interval of time to be added to the hours of Greenwich time, taken from the Almanac, when the earlier Almanac distance is used; or to to be subtracted from the hours of Greenwich time, when the later Almanac distance is used.

Another method is to add the common logarithm of the difference in seconds between the true and the Almanac distances to the P. L. of Diff. of the Almanac; and then the sum will be the common logarithm of the correction to be applied to the hours of Greenwich time. Table 34 of BOWDITCH'S *Navigator* saves the operation of reducing degrees (or hours) and minutes to seconds, and the reverse.

As the P. L. of Diff. in the Almanac varies continually, the Greenwich time found by the methods just described may not be sufficiently exact. To correct it for such variation, or second difference, take the difference between the P. L. of Diff. used and the one which follows it in the Almanac (or, more strictly, half the difference of the preceding and following ones). With this difference, and the first correction of the Greenwich time already found, enter Table I, appended to this volume, and take out the corresponding seconds, which are to be added to the approximate Greenwich time when the Prop. Logs. in the Almanac are decreasing, or subtracted when they are increasing.

Thus the Greenwich mean time of an observation can be ascertained, and if the observer has noted the time of observation by a chronometer, the difference between this chronometer time and the Greenwich mean time will be the error of the chronometer on Greenwich time as found from the lunar distance. In that way lunar distances can be used as a check upon the chronometer, and by a series of them carefully observed on both sides of the Moon, the chronometer error may generally be determined within 20 or 30 seconds.

If the observer has found the local mean time of observation from the observed altitude

of one of the bodies, or by a watch regulated to that time by recent observations and corrected for change of longitude in the interval, the difference of this local time and the Greenwich time found from the lunar distance will be his longitude. A longitude derived by this method should always be considered as uncertain by 5′ or more.

As an example of finding the Greenwich mean time from a lunar distance, suppose that in 1911, June 6, the corrected distance of the Moon's center from Antares is 52° 30′ 0″—

	° ′ ″		
Corrected distance	52 30 0		
Distance in Ephemeris June 6 III hours	52 18 7	P. L.	0.2894
Difference	0 11 53	P. L.	1.1803
		P. L.	0.8909
	h m s		
Time from III hours (*before*)	0 23 8		
Corr. for 2d Diff., Table I	— 1		
Greenwich mean time June 6	2 36 53		

By a table of common logarithms, or a table of logarithms of small arcs, the reduction of the Greenwich time would be found thus:

From Ephemeris	P. L.	0.2894
Diff. of distances, 11′ 53″ = 713″	log	2.8531
Red. of Greenwich time, $1388^s = 0^h\ 23^m\ 8^s$	log	3.1425

The result is the same as by the previous method.

PLANETS, FIXED STARS AND ECLIPSES.

Planetary Ephemerides.—Pages 218–247 contain the daily geocentric ephemerides of all planets visible to the naked eye, namely, Mercury, Venus, Mars, Jupiter, and Saturn. The data given for each planet are, its *Apparent Right Ascension* and *Declination*, with their *Variations for 1 Hour;* the *Mean Time of Meridian Passage;* and, at the bottom of the page, the *Semidiameter* and *Horizontal Parallax.* All these quantities, except the time of meridian passage, are given for the instant of Greenwich mean noon, and the mode of reducing them to any other Greenwich mean time is the same as in the examples of the Sun, previously given. The reduction of the mean time of meridian passage to any other meridian can be found either by dividing the daily difference by 24, and multiplying the hourly difference thus obtained by the longitude, expressed in hours and fractions of an hour; or by the proportion: As 24^h (or 360°) is to the longitude, so is the daily difference to the reduction required.

The right ascension and declination of a planet are required whenever it is observed for time, latitude, or azimuth.

Positions of Fixed Stars.—Pages 248–250 contain the *Mean Places*, with their *Annual Variations*, of one hundred and fifty fixed stars for the beginning of the year 1911. The sign + indicates north declinations; the sign — indicates south declinations.

The right ascension of a star is also the sidereal time of its meridian passage. The mean time of meridian passage may therefore be roughly found from the right ascension by adding the mean time of sidereal noon, on page III of the Calendar, or subtracting the sidereal time of mean noon on page II (disregarding seconds); but if greater accuracy is desired the processes already given for converting sidereal into mean time should be employed, the sidereal time being the right ascension of the star.

The right ascension and declination of a star are required whenever it is observed for time, latitude, or azimuth. The mean places are sufficiently accurate for most observations at sea; but for more exact purposes the apparent places which are given in the unabridged American Ephemeris should be used.

Eclipses.—Pages 251–253 contain the principal elements of the solar eclipses which occur during the year, together with maps of the regions in which the solar eclipses are visible.

The times and angles designated as the circumstances of a lunar eclipse remain the same throughout all parts of the earth, and require no particular explanation. The principal circumstances of each total and annular solar eclipse are stated on five lines, as follows:

The line entitled "Eclipse begins" gives the Greenwich mean time at which the Moon's penumbra first touches the Earth, together with the latitude and longitude of the point of contact.

The line entitled "Central eclipse begins" gives the time when the axis of the Moon's shadow first touches the Earth, and the latitude and longitude of the point of contact follow.

The line entitled "Central eclipse at noon" gives the time when the axes of the Earth and of the shadow cone lie in the same plane. The latitude and longitude of the point where the axis of the shadow cone then cuts the Earth's surface follow, and there the eclipse will be central and the Sun will be exactly on the meridian.

The lines entitled "Central eclipse ends" and "Eclipse ends" give, respectively, the times when and the localities where these events occur, the phenomena being the converse of those denoted by the similar phrases for the beginning.

In the case of partial solar eclipses the axis of the Moon's shadow does not come into contact with the Earth, and the three lines entitled, respectively, "Central eclipse begins," "Central eclipse at noon," and "Central eclipse ends," are replaced by a single line entitled "Greatest eclipse," whereon are given the time when and the latitude and longitude where the eclipse attains its greatest magnitude. The latter phenomenon necessarily occurs with the Sun in the horizon.

Maps of the Eclipses.—The regions in which each eclipse is visible are shown upon the map relating to it, from which may be taken approximately, for any place, both the times of the beginning and ending of the eclipse and its magnitude. The dotted curves show the outline of the shadow for each hour of Greenwich mean time, and therefore pass through all places where the eclipse begins or ends at the hour indicated. To find the instant of beginning at any place, we determine by inspection between what pair of these curved lines the place is situated. The eclipse will then begin between the corresponding hours of Greenwich mean time; and the fraction of the hour may be determined by dividing the hour in the same proportion as the space representing it on the map is divided by the place in question. This division may be made a little more exact by allowing for the changes in the spaces as indicated by their varying width. The Greenwich mean time thus found must be reduced to local mean time by applying the longitude.

As an example, suppose we wish to find the times at which the eclipse of 1911, April 28, begins and ends at the place whose latitude is 14° 18′ S. and whose longitude is 170° 43′ W.

For the beginning we compare the distance of the place from the curves of 8^h and 9^h, and find it to correspond to about 10 minutes from the former, thus giving for the approximate time of beginning $8^h\ 10^m$; for the end we compare the distance of the place from the curves of 10^h and 11^h, and find it to be about 50 minutes from the former, thus giving for the approximate time of ending $10^h\ 50^m$, and both of these results are probably correct to within 3 or 4 minutes. Changing to local mean time, we shall have—

	Beginning.	*Ending.*
	d h m	d h m
Greenwich mean time	April 28 8 10	28 10 50
Longitude west	11 23	11 23
Local mean time	April 27 20 47	27 23 27

In the case of total and annular eclipses, a rough estimate of the magnitude of the eclipse may be obtained from the position of the place relatively to the central line and to the limit. On the central line the eclipse is annular or total, while on the limit the limb of the Moon only grazes that of the Sun.

CORRECTION REQUIRED, ON ACCOUNT OF SECOND DIFFERENCES OF THE MOON'S MOTION, IN FINDING THE GREENWICH TIME CORRESPONDING TO A CORRECTED LUNAR DISTANCE.

Approximate Interval.		DIFFERENCE OF THE PROPORTIONAL LOGARITHMS IN THE EPHEMERIS.																							
		2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52
h m	h m	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s
0 0	3 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 10	2 50	0	0	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3
0 20	2 40	0	1	1	1	1	2	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
0 30	2 30	0	1	1	2	2	2	2	3	3	3	4	4	5	5	5	6	6	6	7	7	7	8	8	8	9	9
0 40	2 20	0	1	1	2	2	3	3	3	4	4	5	5	6	6	6	7	7	8	8	9	9	10	10	10	11	11
0 50	2 10	1	1	2	2	3	3	4	4	5	5	5	6	6	7	7	8	8	9	9	10	10	11	12	12	13	13
1 0	2 0	1	1	2	2	3	3	4	4	5	6	6	7	7	8	8	9	9	10	10	11	12	12	13	13	14	14
1 10	1 50	1	1	2	2	3	4	4	5	5	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	15
1 20	1 40	1	1	2	3	3	4	4	5	6	6	7	7	8	9	9	10	10	11	12	12	13	14	14	15	15	16
1 30	1 30	1	1	2	3	3	4	4	5	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	16

		DIFFERENCE OF THE PROPORTIONAL LOGARITHMS IN THE EPHEMERIS.																							
		54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100
h m	h m	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s
0 0	3 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 10	2 50	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	7
0 20	2 40	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12
0 30	2 30	9	10	10	10	11	11	12	12	12	13	13	13	14	14	14	14	15	15	16	16	16	17	17	17
0 40	2 20	12	12	13	13	13	14	14	15	15	16	16	16	17	17	18	18	19	19	19	20	20	21	21	22
0 50	2 10	14	14	15	15	16	16	16	17	17	18	19	19	20	20	21	21	22	22	22	23	23	24	24	25
1 0	2 0	15	16	16	17	17	18	18	19	19	20	21	21	22	22	23	23	24	24	25	25	26	27	27	28
1 10	1 50	16	17	17	18	18	19	19	20	21	21	22	22	23	24	24	25	25	26	27	27	28	28	29	30
1 20	1 40	17	17	18	19	19	20	20	21	21	22	23	23	24	25	25	26	26	27	28	28	29	29	30	31
1 30	1 30	17	18	18	19	19	20	21	21	22	23	23	24	24	25	25	26	27	27	28	29	29	30	31	31

		DIFFERENCE OF THE PROPORTIONAL LOGARITHMS IN THE EPHEMERIS.																							
		102	104	106	108	110	112	114	116	118	120	122	124	126	128	130	132	134	136	138					
h m	h m	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s					
0 0	3 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0 10	2 50	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	9	9	9	9					
0 20	2 40	13	13	13	13	14	14	14	14	15	15	15	15	15°	16	16	16	16	17	17					
0 30	2 30	18	18	18	19	19	19	20	20	20	21	21	21	22	22	22	23	23	24	24					
0 40	2 20	22	22	23	23	24	24	25	25	25	26	26	27	27	28	28	28	29	29	30					
0 50	2 10	26	26	26	27	27	28	29	29	29	30	30	31	31	32	32	33	33	34	34					
1 0	2 0	28	29	29	30	30	31	31	32	33	33	34	34	35	35	36	37	37	38	38					
1 10	1 50	30	31	31	32	32	33	34	34	35	35	36	37	37	38	38	39	40	40	41					
1 20	1 40	31	32	33	33	34	34	35	35	36	37	38	38	39	39	40	41	41	42	42					
1 30	1 30	32	32	33	34	34	35	35	36	36	37	38	39	39	40	40	41	42	42	43					

The correction is to be added to the approximate Greenwich time when the proportional logarithms in the Ephemeris are decreasing, and subtracted when they are increasing.

TO BE SUBTRACTED FROM A SIDEREAL TIME INTERVAL.

Sidereal.	0h	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h
m	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
0	0 0.0	0 9.8	0 19.7	0 29.5	0 39.3	0 49.1	0 59.0	1 8.8	1 18.6	1 28.5	1 38.3	1 48.1
1	0 0.2	0 10.0	0 19.8	0 29.7	0 39.5	0 49.3	0 59.1	1 9.0	1 18.8	1 28.6	1 38.5	1 48.3
2	0 0.3	0 10.2	0 20.0	0 29.8	0 39.6	0 49.5	0 59.3	1 9.1	1 19.0	1 28.8	1 38.6	1 48.5
3	0 0.5	0 10.3	0 20.2	0 30.0	0 39.8	0 49.6	0 59.5	1 9.3	1 19.1	1 29.0	1 38.8	1 48.6
4	0 0.7	0 10.5	0 20.3	0 30.1	0 40.0	0 49.8	0 59.6	1 9.5	1 19.3	1 29.1	1 39.0	1 48.8
5	0 0.8	0 10.6	0 20.5	0 30.3	0 40.1	0 50.0	0 59.8	1 9.6	1 19.5	1 29.3	1 39.1	1 48.9
6	0 1.0	0 10.8	0 20.6	0 30.5	0 40.3	0 50.1	1 0.0	1 9.8	1 19.6	1 29.4	1 39.3	1 49.1
7	0 1.1	0 11.0	0 20.8	0 30.6	0 40.5	0 50.3	1 0.1	1 10.0	1 19.8	1 29.6	1 39.4	1 49.3
8	0 1.3	0 11.1	0 21.0	0 30.8	0 40.6	0 50.5	1 0.3	1 10.1	1 19.9	1 29.8	1 39.6	1 49.4
9	0 1.5	0 11.3	0 21.1	0 31.0	0 40.8	0 50.6	1 0.5	1 10.3	1 20.1	1 29.9	1 39.8	1 49.6
10	0 1.6	0 11.5	0 21.3	0 31.1	0 41.0	0 50.8	1 0.6	1 10.4	1 20.3	1 30.1	1 39.9	1 49.8
11	0 1.8	0 11.6	0 21.5	0 31.3	0 41.1	0 51.0	1 0.8	1 10.6	1 20.4	1 30.3	1 40.1	1 49.9
12	0 2.0	0 11.8	0 21.6	0 31.5	0 41.3	0 51.1	1 0.9	1 10.8	1 20.6	1 30.4	1 40.3	1 50.1
13	0 2.1	0 12.0	0 21.8	0 31.6	0 41.4	0 51.3	1 1.1	1 10.9	1 20.8	1 30.6	1 40.4	1 50.3
14	0 2.3	0 12.1	0 22.0	0 31.8	0 41.6	0 51.4	1 1.3	1 11.1	1 20.9	1 30.8	1 40.6	1 50.4
15	0 2.5	0 12.3	0 22.1	0 31.9	0 41.8	0 51.6	1 1.4	1 11.3	1 21.1	1 30.9	1 40.8	1 50.6
16	0 2.6	0 12.5	0 22.3	0 32.1	0 41.9	0 51.8	1 1.6	1 11.4	1 21.3	1 31.1	1 40.9	1 50.7
17	0 2.8	0 12.6	0 22.4	0 32.3	0 42.1	0 51.9	1 1.8	1 11.6	1 21.4	1 31.3	1 41.1	1 50.9
18	0 2.9	0 12.8	0 22.6	0 32.4	0 42.3	0 52.1	1 1.9	1 11.8	1 21.6	1 31.4	1 41.2	1 51.1
19	0 3.1	0 12.9	0 22.8	0 32.6	0 42.4	0 52.3	1 2.1	1 11.9	1 21.7	1 31.6	1 41.4	1 51.2
20	0 3.3	0 13.1	0 22.9	0 32.8	0 42.6	0 52.4	1 2.3	1 12.1	1 21.9	1 31.7	1 41.6	1 51.4
21	0 3.4	0 13.3	0 23.1	0 32.9	0 42.8	0 52.6	1 2.4	1 12.2	1 22.1	1 31.9	1 41.7	1 51.6
22	0 3.6	0 13.4	0 23.3	0 33.1	0 42.9	0 52.8	1 2.6	1 12.4	1 22.2	1 32.1	1 41.9	1 51.7
23	0 3.8	0 13.6	0 23.4	0 33.3	0 43.1	0 52.9	1 2.7	1 12.6	1 22.4	1 32.2	1 42.1	1 51.9
24	0 3.9	0 13.8	0 23.6	0 33.4	0 43.2	0 53.1	1 2.9	1 12.7	1 22.6	1 32.4	1 42.2	1 52.1
25	0 4.1	0 13.9	0 23.8	0 33.6	0 43.4	0 53.2	1 3.1	1 12.9	1 22.7	1 32.6	1 42.4	1 52.2
26	0 4.3	0 14.1	0 23.9	0 33.7	0 43.6	0 53.4	1 3.2	1 13.1	1 22.9	1 32.7	1 42.6	1 52.4
27	0 4.4	0 14.3	0 24.1	0 33.9	0 43.7	0 53.6	1 3.4	1 13.2	1 23.1	1 32.9	1 42.7	1 52.5
28	0 4.6	0 14.4	0 24.2	0 34.1	0 43.9	0 53.7	1 3.6	1 13.4	1 23.2	1 33.1	1 42.9	1 52.7
29	0 4.8	0 14.6	0 24.4	0 34.2	0 44.1	0 53.9	1 3.7	1 13.6	1 23.4	1 33.2	1 43.0	1 52.9
30	0 4.9	0 14.7	0 24.6	0 34.4	0 44.2	0 54.1	1 3.9	1 13.7	1 23.6	1 33.4	1 43.2	1 53.0
31	0 5.1	0 14.9	0 24.7	0 34.6	0 44.4	0 54.2	1 4.1	1 13.9	1 23.7	1 33.5	1 43.4	1 53.2
32	0 5.2	0 15.1	0 24.9	0 34.7	0 44.6	0 54.4	1 4.2	1 14.0	1 23.9	1 33.7	1 43.5	1 53.4
33	0 5.4	0 15.2	0 25.1	0 34.9	0 44.7	0 54.6	1 4.4	1 14.2	1 24.0	1 33.9	1 43.7	1 53.5
34	0 5.6	0 15.4	0 25.2	0 35.1	0 44.9	0 54.7	1 4.5	1 14.4	1 24.2	1 34.0	1 43.9	1 53.7
35	0 5.7	0 15.6	0 25.4	0 35.2	0 45.1	0 54.9	1 4.7	1 14.5	1 24.4	1 34.2	1 44.0	1 53.9
36	0 5.9	0 15.7	0 25.6	0 35.4	0 45.2	0 55 0	1 4.9	1 14.7	1 24.5	1 34.4	1 44.2	1 54.0
37	0 6.1	0 15.9	0 25.7	0 35.6	0 45.4	0 55.2	1 5.0	1 14.9	1 24.7	1 34.5	1 44.4	1 54.2
38	0 6.2	0 16.1	0 25.9	0 35.7	0 45.5	0 55.4	1 5.2	1 15.0	1 24.9	1 34.7	1 44.5	1 54.4
39	0 6.4	0 16.2	0 26.0	0 35.9	0 45.7	0 55.5	1 5.4	1 15.2	1 25.0	1 34.9	1 44.7	1 54.5
40	0 6.6	0 16.4	0 26.2	0 36.0	0 45.9	0 55.7	1 5.5	1 15.4	1 25.2	1 35.0	1 44.8	1 54.7
41	0 6.7	0 16.5	0 26.4	0 36.2	0 46.0	0 55.9	1 5.7	1 15.5	1 25.4	1 35.2	1 45.0	1 54.8
42	0 6.9	0 16.7	0 26.5	0 36.4	0 46.2	0 56.0	1 5.9	1 15.7	1 25.5	1 35.3	1 45.2	1 55.0
43	0 7.0	0 16.9	0 26.7	0 36.5	0 46.4	0 56.2	1 6.0	1 15.9	1 25.7	1 35.5	1 45.3	1 55.2
44	0 7.2	0 17.0	0 26.9	0 36.7	0 46.5	0 56.4	1 6.2	1 16.0	1 25.8	1 35.7	1 45.5	1 55.3
45	0 7.4	0 17.2	0 27.0	0 36.9	0 46.7	0 56.5	1 6.4	1 16.2	1 26.0	1 35.8	1 45.7	1 55.5
46	0 7.5	0 17.4	0 27.2	0 37.0	0 46.9	0 56.7	1 6.5	1 16.3	1 26.2	1 36.0	1 45.8	1 55.7
47	0 7.7	0 17.5	0 27.4	0 37.2	0 47.0	0 56.8	1 6.7	1 16.5	1 26.3	1 36.2	1 46.0	1 55.8
48	0 7.9	0 17.7	0 27.5	0 37.4	0 47.2	0 57.0	1 6.8	1 16.7	1 26.5	1 36.3	1 46.2	1 56.0
49	0 8.0	0 17.9	0 27.7	0 37.5	0 47.3	0 57.2	1 7.0	1 16.8	1 26.7	1 36.5	1 46.3	1 56.2
50	0 8.2	0 18.0	0 27.8	0 37.7	0 47.5	0 57.3	1 7.2	1 17.0	1 26.8	1 36.7	1 46.5	1 56.3
51	0 8.4	0 18 2	0 28.0	0 37.8	0 47.7	0 57.5	1 7.3	1 17.2	1 27.0	1 36.8	1 46.7	1 56.5
52	0 8.5	0 18.3	0 28.2	0 38.0	0 47.8	0 57.7	1 7.5	1 17.3	1 27.2	1 37.0	1 46.8	1 56.6
53	0 8.7	0 18.5	0 28.3	0 38.2	0 48.0	0 57.8	1 7.7	1 17.5	1 27.3	1 37.1	1 47.0	1 56.8
54	0 8.8	0 18.7	0 28.5	0 38.3	0 48.2	0 58.0	1 7.8	1 17.7	1 27.5	1 37.3	1 47.1	1 57.0
55	0 9.0	0 18.8	0 28.7	0 38.5	0 48.3	0 58.2	1 8.0	1 17.8	1 27.6	1 37.5	1 47.3	1 57.1
56	0 9.2	0 19.0	0 28.8	0 38.7	0 48.5	0 58.3	1 8.2	1 18.0	1 27.8	1 37.6	1 47.5	1 57.3
57	0 9.3	0 19.2	0 29.0	0 38.8	0 48.7	0 58.5	1 8.3	1 18.1	1 28.0	1 37.8	1 47.6	1 57.5
58	0 9.5	0 19.3	0 29.2	0 39.0	0 48.8	0 58.6	1 8.5	1 18.3	1 28.1	1 38.0	1 47.8	1 57.6
59	0 9.7	0 19.5	0 29.3	0 39.2	0 49.0	0 58.8	1 8.6	1 18.5	1 28.3	1 38.1	1 48.0	1 57.8
Sidereal.	0h	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h

TO BE SUBTRACTED FROM A SIDEREAL TIME INTERVAL.

Sidereal.	12h	13h	14h	15h	16h	17h	18h	19h	20h	21h	22h	23h
m	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
0	1 58.0	2 7.8	2 17.6	2 27.4	2 37.3	2 47.1	2 56.9	3 6.8	3 16.6	3 26.4	3 36.2	3 46.1
1	1 58.1	2 7.9	2 17.8	2 27.6	2 37.4	2 47.3	2 57.1	3 6.9	3 16.8	3 26.6	3 36.4	3 46.2
2	1 58.3	2 8.1	2 17.9	2 27.8	2 37.6	2 47.4	2 57.3	3 7.1	3 16.9	3 26.7	3 36.6	3 46.4
3	1 58.4	2 8.3	2 18.1	2 27.9	2 37.8	2 47.6	2 57.4	3 7.2	3 17.1	3 26.9	3 36.7	3 46.6
4	1 58.6	2 8.4	2 18.3	2 28.1	2 37.9	2 47.8	2 57.6	3 7.4	3 17.2	3 27.1	3 36.9	3 46.7
5	1 58.8	2 8.6	2 18.4	2 28.3	2 38.1	2 47.9	2 57.8	3 7.6	3 17.4	3 27.2	3 37.1	3 46.9
6	1 58.9	2 8.8	2 18.6	2 28.4	2 38.3	2 48.0	2 57.9	3 7.7	3 17.6	3 27.4	3 37.2	3 47.1
7	1 59.1	2 8.9	2 18.8	2 28.6	2 38.4	2 48.2	2 58.1	3 7.9	3 17.7	3 27.6	3 37.4	3 47.2
8	1 59.3	2 9.1	2 18.9	2 28.8	2 38.6	2 48.4	2 58.2	3 8.1	3 17.9	3 27.7	3 37.6	3 47.4
9	1 59.4	2 9.3	2 19.1	2 28.9	2 38.7	2 48.6	2 58.4	3 8.2	3 18.1	3 27.9	3 37.7	3 47.6
10	1 59.6	2 9.4	2 19.3	2 29.1	2 38.9	2 48.7	2 58.6	3 8.4	3 18.2	3 28.1	3 37.9	3 47.7
11	1 59.8	2 9.6	2 19.4	2 29.2	2 39.1	2 48.9	2 58.7	3 8.6	3 18.4	3 28.2	3 38.1	3 47.9
12	1 59.9	2 9.8	2 19.6	2 29.4	2 39.2	2 49.1	2 58.9	3 8.7	3 18.6	3 28.4	3 38.2	3 48.0
13	2 0.1	2 9.9	2 19.7	2 29.6	2 39.4	2 49.2	2 59.1	3 8.9	3 18.7	3 28.6	3 38.4	3 48.2
14	2 0.2	2 10.1	2 19.9	2 29.7	2 39.6	2 49.4	2 59.2	3 9.1	3 18.9	3 28.7	3 38.5	3 48.4
15	2 0.4	2 10.2	2 20.1	2 29.9	2 39.7	2 49.6	2 59.4	3 9.2	3 19.0	3 28.9	3 38.7	3 48.5
16	2 0.6	2 10.4	2 20.2	2 30.1	2 39.9	2 49.7	2 59.6	3 9.4	3 19.2	3 29.0	3 38.9	3 48.7
17	2 0.7	2 10.6	2 20.4	2 30.2	2 40.1	2 49.9	2 59.7	3 9.5	3 19.4	3 29.2	3 39.0	3 48.9
18	2 0.9	2 10.7	2 20.6	2 30.4	2 40.2	2 50.1	2 59.9	3 9.7	3 19.5	3 29.4	3 39.2	3 49.0
19	2 1.1	2 10.9	2 20.7	2 30.6	2 40.4	2 50.2	3 0.0	3 9.9	3 19.7	3 29.5	3 39.4	3 49.2
20	2 1.2	2 11.1	2 20.9	2 30.7	2 40.5	2 50.4	3 0.2	3 10.0	3 19.9	3 29.7	3 39.5	3 49.4
21	2 1.4	2 11.2	2 21.1	2 30.9	2 40.7	2 50.5	3 0.4	3 10.2	3 20.0	3 29.9	3 39.7	3 49.5
22	2 1.6	2 11.4	2 21.2	2 31.0	2 40.9	2 50.7	3 0.5	3 10.4	3 20.2	3 30.0	3 39.9	3 49.7
23	2 1.7	2 11.6	2 21.4	2 31.2	2 41.0	2 50.9	3 0.7	3 10.5	3 20.4	3 30.2	3 40.0	3 49.8
24	2 1.9	2 11.7	2 21.5	2 31.4	2 41.2	2 51.0	3 0.9	3 10.7	3 20.5	3 30.4	3 40.2	3 50.0
25	2 2.0	2 11.9	2 21.7	2 31.5	2 41.4	2 51.2	3 1.0	3 10.9	3 20.7	3 30.5	3 40.3	3 50.2
26	2 2.2	2 12.0	2 21.9	2 31.7	2 41.5	2 51.4	3 1.2	3 11.0	3 20.9	3 30.7	3 40.5	3 50.3
27	2 2.4	2 12.2	2 22.0	2 31.9	2 41.7	2 51.5	3 1.4	3 11.2	3 21.0	3 30.8	3 40.7	3 50.5
28	2 2.5	2 12.4	2 22.2	2 32.0	2 41.9	2 51.7	3 1.5	3 11.3	3 21.2	3 31.0	3 40.8	3 50.7
29	2 2.7	2 12.5	2 22.4	2 32.2	2 42.0	2 51.9	3 1.7	3 11.5	3 21.3	3 31.2	3 41.0	3 50.8
30	2 2.9	2 12.7	2 22.5	2 32.4	2 42.2	2 52.0	3 1.8	3 11.7	3 21.5	3 31.3	3 41.2	3 51.0
31	2 3.0	2 12.9	2 22.7	2 32.5	2 42.4	2 52.2	3 2.0	3 11.8	3 21.7	3 31.5	3 41.3	3 51.2
32	2 3.2	2 13.0	2 22.9	2 32.7	2 42.5	2 52.3	3 2.2	3 12.0	3 21.8	3 31.7	3 41.5	3 51.3
33	2 3.4	2 13.2	2 23.0	2 32.8	2 42.7	2 52.5	3 2.3	3 12.2	3 22.0	3 31.8	3 41.7	3 51.5
34	2 3.5	2 13.4	2 23.2	2 33.0	2 42.8	2 52.7	3 2.5	3 12.3	3 22.2	3 32.0	3 41.8	3 51.6
35	2 3.7	2 13.5	2 23.3	2 33.2	2 43.0	2 52.8	3 2.6	3 12.5	3 22.3	3 32.2	3 42.0	3 51.8
36	2 3.9	2 13.7	2 23.5	2 33.3	2 43.2	2 53.0	3 2.8	3 12.7	3 22.5	3 32.3	3 42.1	3 52.0
37	2 4.0	2 13.8	2 23.7	2 33.5	2 43.3	2 53.2	3 3.0	3 12.8	3 22.7	3 32.5	3 42.3	3 52.1
38	2 4.2	2 14.0	2 23.8	2 33.7	2 43.5	2 53.3	3 3.2	3 13.0	3 22.8	3 32.6	3 42.5	3 52.3
39	2 4.3	2 14.2	2 24.0	2 33.8	2 43.7	2 53.5	3 3.3	3 13.2	3 23.0	3 32.8	3 42.6	3 52.5
40	2 4.5	2 14.3	2 24.2	2 34.0	2 43.8	2 53.7	3 3.5	3 13.3	3 23.1	3 33.0	3 42.8	3 52.6
41	2 4.7	2 14.5	2 24.3	2 34.2	2 44.0	2 53.8	3 3.6	3 13.5	3 23.3	3 33.1	3 43.0	3 52.8
42	2 4.8	2 14.7	2 24.5	2 34.3	2 44.2	2 54.0	3 3.8	3 13.6	3 23.5	3 33.3	3 43.1	3 53.0
43	2 5.0	2 14.8	2 24.7	2 34.5	2 44.3	2 54.1	3 4.0	3 13.8	3 23.6	3 33.5	3 43.3	3 53.1
44	2 5.2	2 15.0	2 24.8	2 34.7	2 44.5	2 54.3	3 4.1	3 14.0	3 23.8	3 33.6	3 43.5	3 53.3
45	2 5.3	2 15.2	2 25.0	2 34.8	2 44.6	2 54.5	3 4.3	3 14.1	3 24.0	3 33.8	3 43.6	3 53.5
46	2 5.5	2 15.3	2 25.2	2 35.0	2 44.8	2 54.6	3 4.5	3 14.3	3 24.1	3 34.0	3 43.8	3 53.6
47	2 5.7	2 15.5	2 25.3	2 35.1	2 45.0	2 54.8	3 4.6	3 14.5	3 24.3	3 34.1	3 44.0	3 53.8
48	2 5.8	2 15.6	2 25.5	2 35.3	2 45.1	2 55.0	3 4.8	3 14.6	3 24.5	3 34.3	3 44.1	3 53.9
49	2 6.0	2 15.8	2 25.6	2 35.5	2 45.3	2 55.1	3 5.0	3 14.8	3 24.6	3 34.4	3 44.3	3 54.1
50	2 6.1	2 16.0	2 25.8	2 35.6	2 45.5	2 55.3	3 5.1	3 15.0	3 24.8	3 34.6	3 44.4	3 54.3
51	2 6.3	2 16.1	2 26.0	2 35.8	2 45.6	2 55.5	3 5.3	3 15.1	3 24.9	3 34.8	3 44.6	3 54.4
52	2 6.5	2 16.3	2 26.1	2 36.0	2 45.8	2 55.6	3 5.5	3 15.3	3 25.1	3 34.9	3 44.8	3 54.6
53	2 6.6	2 16.5	2 26.3	2 36.1	2 46.0	2 55.8	3 5.6	3 15.4	3 25.3	3 35.1	3 44.9	3 54.8
54	2 6.8	2 16.6	2 26.5	2 36.3	2 46.1	2 55.9	3 5.8	3 15.6	3 25.4	3 35.3	3 45.1	3 54.9
55	2 7.0	2 16.8	2 26.6	2 36.5	2 46.3	2 56.1	3 5.9	3 15.8	3 25.6	3 35.4	3 45.3	3 55.1
56	2 7.1	2 17.0	2 26.8	2 36.6	2 46.4	2 56.3	3 6.1	3 15.9	3 25.8	3 35.6	3 45.4	3 55.3
57	2 7.3	2 17.1	2 27.0	2 36.8	2 46.6	2 56.4	3 6.3	3 16.1	3 25.9	3 35.8	3 45.6	3 55.4
58	2 7.5	2 17.3	2 27.1	2 36.9	2 46.8	2 56.6	3 6.4	3 16.3	3 26.1	3 35.9	3 45.8	3 55.6
59	2 7.6	2 17.4	2 27.3	2 37.1	2 46.9	2 56.8	3 6.6	3 16.4	3 26.3	3 36.1	3 45.9	3 55.7
Sidereal.	12h	13h	14h	15h	16h	17h	18h	19h	20h	21h	22h	23h

TO BE ADDED TO A MEAN TIME INTERVAL.

Mean Solar.	0h	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h
m	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
0	0 0.0	0 9.9	0 19.7	0 29.6	0 39.4	0 49.3	0 59.1	1 9.0	1 18.9	1 28.7	1 38.6	1 48.4
1	0 0.2	0 10.0	0 19.9	0 29.7	0 39.6	0 49.4	0 59.3	1 9.2	1 19.0	1 28.9	1 38.7	1 48.6
2	0 0.3	0 10.2	0 20.0	0 29.9	0 39.8	0 49.6	0 59.5	1 9.3	1 19.2	1 29.0	1 38.9	1 48.8
3	0 0.5	0 10.3	0 20.2	0 30.1	0 39.9	0 49.8	0 59.6	1 9.5	1 19.3	1 29.2	1 39.1	1 48.9
4	0 0.7	0 10.5	0 20.4	0 30.2	0 40.1	0 49.9	0 59.8	1 9.7	1 19.5	1 29.4	1 39.2	1 49.1
5	0 0.8	0 10.7	0 20.5	0 30.4	0 40.2	0 50.1	1 0.0	1 9.8	1 19.7	1 29.5	1 39.4	1 49.2
6	0 1.0	0 10.8	0 20.7	0 30.6	0 40.4	0 50.3	1 0.1	1 10.0	1 19.8	1 29.7	1 39.6	1 49.4
7	0 1.2	0 11.0	0 20.9	0 30.7	0 40.6	0 50.4	1 0.3	1 10.1	1 20.0	1 29.9	1 39.7	1 49.6
8	0 1.3	0 11.2	0 21.0	0 30.9	0 40.7	0 50.6	1 0.5	1 10.3	1 20.2	1 30.0	1 39.9	1 49.7
9	0 1.5	0 11.3	0 21.2	0 31.0	0 40.9	0 50.8	1 0.6	1 10.5	1 20.3	1 30.2	1 40.0	1 49.9
10	0 1.6	0 11.5	0 21.4	0 31.2	0 41.1	0 50.9	1 0.8	1 10.6	1 20.5	1 30.4	1 40.2	1 50.1
11	0 1.8	0 11.7	0 21.5	0 31.4	0 41.2	0 51.1	1 0.9	1 10.8	1 20.7	1 30.5	1 40.4	1 50.2
12	0 2.0	0 11.8	0 21.7	0 31.5	0 41.4	0 51.3	1 1.1	1 11.0	1 20.8	1 30.7	1 40.5	1 50.4
13	0 2.1	0 12.0	0 21.8	0 31.7	0 41.6	0 51.4	1 1.3	1 11.1	1 21.0	1 30.8	1 40.7	1 50.6
14	0 2.3	0 12.2	0 22.0	0 31.9	0 41.7	0 51.6	1 1.4	1 11.3	1 21.2	1 31.0	1 40.9	1 50.7
15	0 2.5	0 12.3	0 22.2	0 32.0	0 41.9	0 51.7	1 1.6	1 11.5	1 21.3	1 31.2	1 41.0	1 50.9
16	0 2.6	0 12.5	0 22.3	0 32.2	0 42.1	0 51.9	1 1.8	1 11.6	1 21.5	1 31.3	1 41.2	1 51.0
17	0 2.8	0 12.6	0 22.5	0 32.4	0 42.2	0 52.1	1 1.9	1 11.8	1 21.6	1 31.5	1 41.4	1 51.2
18	0 3.0	0 12.8	0 22.7	0 32.5	0 42.4	0 52.2	1 2.1	1 12.0	1 21.8	1 31.7	1 41.5	1 51.4
19	0 3.1	0 13.0	0 22.8	0 32.7	0 42.5	0 52.4	1 2.3	1 12.1	1 22.0	1 31.8	1 41.7	1 51.5
20	0 3.3	0 13.1	0 23.0	0 32.9	0 42.7	0 52.6	1 2.4	1 12.3	1 22.1	1 32.0	1 41.8	1 51.7
21	0 3.4	0 13.3	0 23.2	0 33.0	0 42.9	0 52.7	1 2.6	1 12.4	1 22.3	1 32.2	1 42.0	1 51.9
22	0 3.6	0 13.5	0 23.3	0 33.2	0 43.0	0 52.9	1 2.8	1 12.6	1 22.5	1 32.3	1 42.2	1 52.0
23	0 3.8	0 13.6	0 23.5	0 33.3	0 43.2	0 53.1	1 2.9	1 12.8	1 22.6	1 32.5	1 42.3	1 52.2
24	0 3.9	0 13.8	0 23.7	0 33.5	0 43.4	0 53.2	1 3.1	1 12.9	1 22.8	1 32.7	1 42.5	1 52.4
25	0 4.1	0 14.0	0 23.8	0 33.7	0 43.5	0 53.4	1 3.2	1 13.1	1 23.0	1 32.8	1 42.7	1 52.5
26	0 4.3	0 14.1	0 24.0	0 33.8	0 43.7	0 53.6	1 3.4	1 13.3	1 23.1	1 33.0	1 42.8	1 52.7
27	0 4.4	0 14.3	0 24.1	0 34.0	0 43.9	0 53.7	1 3.6	1 13.4	1 23.3	1 33.1	1 43.0	1 52.9
28	0 4.6	0 14.5	0 24.3	0 34.2	0 44.0	0 53.9	1 3.7	1 13.6	1 23.5	1 33.3	1 43.2	1 53.0
29	0 4.8	0 14.6	0 24.5	0 34.3	0 44.2	0 54.0	1 3.9	1 13.8	1 23.6	1 33.5	1 43.3	1 53.2
30	0 4.9	0 14.8	0 24.6	0 34.5	0 44.4	0 54.2	1 4.1	1 13.9	1 23.8	1 33.6	1 43.5	1 53.3
31	0 5.1	0 14.9	0 24.8	0 34.7	0 44.5	0 54.4	1 4.2	1 14.1	1 23.9	1 33.8	1 43.7	1 53.5
32	0 5.3	0 15.1	0 25.0	0 34.8	0 44.7	0 54.5	1 4.4	1 14.3	1 24.1	1 34.0	1 43.8	1 53.7
33	0 5.4	0 15.3	0 25.1	0 35.0	0 44.8	0 54.7	1 4.6	1 14.4	1 24.3	1 34.1	1 44.0	1 53.8
34	0 5.6	0 15.4	0 25.3	0 35.2	0 45.0	0 54.9	1 4.7	1 14.6	1 24.4	1 34.3	1 44.2	1 54.0
35	0 5.8	0 15.6	0 25.5	0 35.3	0 45.2	0 55.0	1 4.9	1 14.7	1 24.6	1 34.5	1 44.3	1 54.2
36	0 5.9	0 15.8	0 25.6	0 35.5	0 45.3	0 55.2	1 5.1	1 14.9	1 24.8	1 34.6	1 44.5	1 54.3
37	0 6.1	0 15.9	0 25.8	0 35.6	0 45.5	0 55.4	1 5.2	1 15.1	1 24.9	1 34.8	1 44.6	1 54.5
38	0 6.2	0 16.1	0 26.0	0 35.8	0 45.7	0 55.5	1 5.4	1 15.2	1 25.1	1 35.0	1 44.8	1 54.7
39	0 6.4	0 16.3	0 26.1	0 36.0	0 45.8	0 55.7	1 5.5	1 15.4	1 25.3	1 35.1	1 45.0	1 54.8
40	0 6.6	0 16.4	0 26.3	0 36.1	0 46.0	0 55.9	1 5.7	1 15.6	1 25.4	1 35.3	1 45.1	1 55.0
41	0 6.7	0 16.6	0 26.4	0 36.3	0 46.2	0 56.0	1 5.9	1 15.7	1 25.6	1 35.4	1 45.3	1 55.2
42	0 6.9	0 16.8	0 26.6	0 36.5	0 46.3	0 56.2	1 6.0	1 15.9	1 25.8	1 35.6	1 45.5	1 55.3
43	0 7.1	0 16.9	0 26.8	0 36.6	0 46.5	0 56.3	1 6.2	1 16.1	1 25.9	1 35.8	1 45.6	1 55.5
44	0 7.2	0 17.1	0 26.9	0 36.8	0 46.7	0 56.5	1 6.4	1 16.2	1 26.1	1 35.9	1 45.8	1 55.6
45	0 7.4	0 17.2	0 27.1	0 37.0	0 46.8	0 56.7	1 6.5	1 16.4	1 26.2	1 36.1	1 46.0	1 55.8
46	0 7.6	0 17.4	0 27.3	0 37.1	0 47.0	0 56.8	1 6.7	1 16.6	1 26.4	1 36.3	1 46.1	1 56.0
47	0 7.7	0 17.6	0 27.4	0 37.3	0 47.1	0 57.0	1 6.9	1 16.7	1 26.6	1 36.4	1 46.3	1 56.1
48	0 7.9	0 17.7	0 27.6	0 37.5	0 47.3	0 57.2	1 7.0	1 16.9	1 26.7	1 36.6	1 46.4	1 56.3
49	0 8.0	0 17.9	0 27.8	0 37.6	0 47.5	0 57.3	1 7.2	1 17.0	1 26.9	1 36.8	1 46.6	1 56.5
50	0 8.2	0 18.1	0 27.9	0 37.8	0 47.6	0 57.5	1 7.4	1 17.2	1 27.1	1 36.9	1 46.8	1 56.6
51	0 8.4	0 18.2	0 28.1	0 37.9	0 47.8	0 57.7	1 7.5	1 17.4	1 27.2	1 37.1	1 46.9	1 56.8
52	0 8.5	0 18.4	0 28.3	0 38.1	0 48.0	0 57.8	1 7.7	1 17.5	1 27.4	1 37.3	1 47.1	1 57.0
53	0 8.7	0 18.6	0 28.4	0 38.3	0 48.1	0 58.0	1 7.8	1 17.7	1 27.6	1 37.4	1 47.3	1 57.1
54	0 8.9	0 18.7	0 28.6	0 38.4	0 48.3	0 58.2	1 8.0	1 17.9	1 27.7	1 37.6	1 47.4	1 57.3
55	0 9.0	0 18.9	0 28.7	0 38.6	0 48.5	0 58.3	1 8.2	1 18.0	1 27.9	1 37.7	1 47.6	1 57.5
56	0 9.2	0 19.1	0 28.9	0 38.8	0 48.6	0 58.5	1 8.3	1 18.2	1 28.1	1 37.9	1 47.8	1 57.6
57	0 9.4	0 19.2	0 29.1	0 38.9	0 48.8	0 58.6	1 8.5	1 18.4	1 28.2	1 38.1	1 47.9	1 57.8
58	0 9.5	0 19.4	0 29.2	0 39.1	0 49.0	0 58.8	1 8.7	1 18.5	1 28.4	1 38.2	1 48.1	1 57.9
59	0 9.7	0 19.5	0 29.4	0 39.3	0 49.1	0 59.0	1 8.8	1 18.7	1 28.5	1 38.4	1 48.3	1 58.1
Mean Solar.	0h	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h

TO BE ADDED TO A MEAN TIME INTERVAL.

Mean Solar.	12h	13h	14h	15h	16h	17h	18h	19h	20h	21h	22h	23h
m	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
0	1 58.3	2 8.1	2 18.0	2 27.8	2 37.7	2 47.6	2 57.4	3 7.3	3 17.1	3 27.0	3 36.8	3 46.7
1	1 58.4	2 8.3	2 18.2	2 28.0	2 37.9	2 47.7	2 57.6	3 7.4	3 17.3	3 27.2	3 37.0	3 46.9
2	1 58.6	2 8.5	2 18.3	2 28.2	2 38.0	2 47.9	2 57.7	3 7.6	3 17.5	3 27.3	3 37.2	3 47.0
3	1 58.8	2 8.6	2 18.5	2 28.3	2 38.2	2 48.1	2 57.9	3 7.8	3 17.6	3 27.5	3 37.3	3 47.2
4	1 58.9	2 8.8	2 18.6	2 28.5	2 38.4	2 48.2	2 58.1	3 7.9	3 17.8	3 27.6	3 37.5	3 47.4
5	1 59.1	2 9.0	2 18.8	2 28.7	2 38.5	2 48.4	2 58.2	3 8.1	3 18.0	3 27.8	3 37.7	3 47.5
6	1 59.3	2 9.1	2 19.0	2 28.8	2 38.7	2 48.5	2 58.4	3 8.3	3 18.1	3 28.0	3 37.8	3 47.7
7	1 59.4	2 9.3	2 19.1	2 29.0	2 38.9	2 48.7	2 58.6	3 8.4	3 18.3	3 28.1	3 38.0	3 47.8
8	1 59.6	2 9.4	2 19.3	2 29.2	2 39.0	2 48.9	2 58.7	3 8.6	3 18.4	3 28.3	3 38.2	3 48.0
9	1 59.8	2 9.6	2 19.5	2 29.3	2 39.2	2 49.0	2 58.9	3 8.8	3 18.6	3 28.5	3 38.3	3 48.2
10	1 59.9	2 9.8	2 19.6	2 29.5	2 39.3	2 49.2	2 59.1	3 8.9	3 18.8	3 28.6	3 38.5	3 48.3
11	2 0.1	2 9.9	2 19.8	2 29.7	2 39.5	2 49.4	2 59.2	3 9.1	3 18.9	3 28.8	3 38.6	3 48.5
12	2 0.2	2 10.1	2 20.0	2 29.8	2 39.7	2 49.5	2 59.4	3 9.2	3 19.1	3 29.0	3 38.8	3 48.7
13	2 0.4	2 10.3	2 20.1	2 30.0	2 39.8	2 49.7	2 59.6	3 9.4	3 19.3	3 29.1	3 39.0	3 48.8
14	2 0.6	2 10.4	2 20.3	2 30.1	2 40.0	2 49.9	2 59.7	3 9.6	3 19.4	3 29.3	3 39.1	3 49.0
15	2 0.7	2 10.6	2 20.5	2 30.3	2 40.2	2 50.0	2 59.9	3 9.7	3 19.6	3 29.4	3 39.3	3 49.2
16	2 0.9	2 10.8	2 20.6	2 30.5	2 40.3	2 50.2	3 0.0	3 9.9	3 19.8	3 29.6	3 39.5	3 49.3
17	2 1.1	2 10.9	2 20.8	2 30.6	2 40.5	2 50.4	3 0.2	3 10.1	3 19.9	3 29.8	3 39.6	3 49.5
18	2 1.2	2 11.1	2 20.9	2 30.8	2 40.7	2 50.5	3 0.4	3 10.2	3 20.1	3 29.9	3 39.8	3 49.7
19	2 1.4	2 11.3	2 21.1	2 31.0	2 40.8	2 50.7	3 0.5	3 10.4	3 20.3	3 30.1	3 40.0	3 49.8
20	2 1.6	2 11.4	2 21.3	2 31.1	2 41.0	2 50.8	3 0.7	3 10.6	3 20.4	3 30.3	3 40.1	3 50.0
21	2 1.7	2 11.6	2 21.4	2 31.3	2 41.2	2 51.0	3 0.9	3 10.7	3 20.6	3 30.4	3 40.3	3 50.1
22	2 1.9	2 11.7	2 21.6	2 31.5	2 41.3	2 51.2	3 1.0	3 10.9	3 20.7	3 30.6	3 40.5	3 50.3
23	2 2.1	2 11.9	2 21.8	2 31.6	2 41.5	2 51.3	3 1.2	3 11.1	3 20.9	3 30.8	3 40.6	3 50.5
24	2 2.2	2 12.1	2 21.9	2 31.8	2 41.6	2 51.5	3 1.4	3 11.2	3 21.1	3 30.9	3 40.8	3 50.6
25	2 2.4	2 12.2	2 22.1	2 32.0	2 41.8	2 51.7	3 1.5	3 11.4	3 21.2	3 31.1	3 40.9	3 50.8
26	2 2.5	2 12.4	2 22.3	2 32.1	2 42.0	2 51.8	3 1.7	3 11.5	3 21.4	3 31.3	3 41.1	3 51.0
27	2 2.7	2 12.6	2 22.4	2 32.3	2 42.1	2 52.0	3 1.9	3 11.7	3 21.6	3 31.4	3 41.3	3 51.1
28	2 2.9	2 12.7	2 22.6	2 32.4	2 42.3	2 52.2	3 2.0	3 11.9	3 21.7	3 31.6	3 41.4	3 51.3
29	2 3.0	2 12.9	2 22.8	2 32.6	2 42.5	2 52.3	3 2.2	3 12.0	3 21.9	3 31.8	3 41.6	3 51.5
30	2 3.2	2 13.1	2 22.9	2 32.8	2 42.6	2 52.5	3 2.3	3 12.2	3 22.1	3 31.9	3 41.8	3 51.6
31	2 3.4	2 13.2	2 23.1	2 32.9	2 42.8	2 52.7	3 2.5	3 12.4	3 22.2	3 32.1	3 41.9	3 51.8
32	2 3.5	2 13.4	2 23.2	2 33.1	2 43.0	2 52.8	3 2.7	3 12.5	3 22.4	3 32.2	3 42.1	3 52.0
33	2 3.7	2 13.6	2 23.4	2 33.3	2 43.1	2 53.0	3 2.8	3 12.7	3 22.6	3 32.4	3 42.3	3 52.1
34	2 3.9	2 13.7	2 23.6	2 33.4	2 43.3	2 53.1	3 3.0	3 12.9	3 22.7	3 32.6	3 42.4	3 52.3
35	2 4.0	2 13.9	2 23.7	2 33.6	2 43.5	2 53.3	3 3.2	3 13.0	3 22.9	3 32.7	3 42.6	3 52.4
36	2 4.2	2 14.0	2 23.9	2 33.8	2 43.6	2 53.5	3 3.3	3 13.2	3 23.0	3 32.9	3 42.8	3 52.6
37	2 4.4	2 14.2	2 24.1	2 33.9	2 43.8	2 53.6	3 3.5	3 13.4	3 23.2	3 33.1	3 42.9	3 52.8
38	2 4.5	2 14.4	2 24.2	2 34.1	2 43.9	2 53.8	3 3.7	3 13.5	3 23.4	3 33.2	3 43.1	3 52.9
39	2 4.7	2 14.5	2 24.4	2 34.3	2 44.1	2 54.0	3 3.8	3 13.7	3 23.5	3 33.4	3 43.2	3 53.1
40	2 4.8	2 14.7	2 24.6	2 34.4	2 44.3	2 54.1	3 4.0	3 13.8	3 23.7	3 33.6	3 43.4	3 53.3
41	2 5.0	2 14.9	2 24.7	2 34.6	2 44.4	2 54.3	3 4.2	3 14.0	3 23.9	3 33.7	3 43.6	3 53.4
42	2 5.2	2 15.0	2 24.9	2 34.7	2 44.6	2 54.5	3 4.3	3 14.2	3 24.0	3 33.9	3 43.7	3 53.6
43	2 5.3	2 15.2	2 25.1	2 34.9	2 44.8	2 54.6	3 4.5	3 14.3	3 24.2	3 34.0	3 43.9	3 53.8
44	2 5.5	2 15.4	2 25.2	2 35.1	2 44.9	2 54.8	3 4.6	3 14.5	3 24.4	3 34.2	3 44.1	3 53.9
45	2 5.7	2 15.5	2 25.4	2 35.2	2 45.1	2 55.0	3 4.8	3 14.7	3 24.5	3 34.4	3 44.2	3 54.1
46	2 5.8	2 15.7	2 25.5	2 35.4	2 45.3	2 55.1	3 5.0	3 14.8	3 24.7	3 34.5	3 44.4	3 54.3
47	2 6.0	2 15.9	2 25.7	2 35.6	2 45.4	2 55.3	3 5.1	3 15.0	3 24.8	3 34.7	3 44.6	3 54.4
48	2 6.2	2 16.0	2 25.9	2 35.7	2 45.6	2 55.4	3 5.3	3 15.2	3 25.0	3 34.9	3 44.7	3 54.6
49	2 6.3	2 16.2	2 26.0	2 35.9	2 45.8	2 55.6	3 5.5	3 15.3	3 25.2	3 35.0	3 44.9	3 54.7
50	2 6.5	2 16.3	2 26.2	2 36.1	2 45.9	2 55.8	3 5.6	3 15.5	3 25.3	3 35.2	3 45.1	3 54.9
51	2 6.7	2 16.5	2 26.4	2 36.2	2 46.1	2 55.9	3 5.8	3 15.7	3 25.5	3 35.4	3 45.2	3 55.1
52	2 6.8	2 16.7	2 26.5	2 36.4	2 46.2	2 56.1	3 6.0	3 15.8	3 25.7	3 35.5	3 45.4	3 55.2
53	2 7.0	2 16.8	2 26.7	2 36.6	2 46.4	2 56.3	3 6.1	3 16.0	3 25.8	3 35.7	3 45.5	3 55.4
54	2 7.1	2 17.0	2 26.9	2 36.7	2 46.6	2 56.4	3 6.3	3 16.1	3 26.0	3 35.9	3 45.7	3 55.6
55	2 7.3	2 17.2	2 27.0	2 36.9	2 46.7	2 56.6	3 6.5	3 16.3	3 26.2	3 36.0	3 45.9	3 55.7
56	2 7.5	2 17.3	2 27.2	2 37.0	2 46.9	2 56.8	3 6.6	3 16.5	3 26.3	3 36.2	3 46.0	3 55.9
57	2 7.6	2 17.5	2 27.4	2 37.2	2 47.1	2 56.9	3 6.8	3 16.6	3 26.5	3 36.4	3 46.2	3 56.1
58	2 7.8	2 17.7	2 27.5	2 37.4	2 47.2	2 57.1	3 6.9	3 16.8	3 26.7	3 36.5	3 46.4	3 56.2
59	2 8.0	2 17.8	2 27.7	2 37.5	2 47.4	2 57.3	3 7.1	3 17.0	3 26.8	3 36.7	3 46.5	3 56.4
Mean Solar.	12h	13h	14h	15h	16h	17h	18h	19h	20h	21h	22h	23h

TABLE FOR FINDING THE LATITUDE BY AN OBSERVED ALTITUDE OF POLARIS.

Reduce the observed altitude of Polaris to the true altitude.

Reduce the recorded time of observation to the local sidereal time.

If the sidereal time is { less than $1^h\ 27^m.1$, subtract it from $1^h\ 27^m.1$; between $1^h\ 27^m.1$ and $13^h\ 27^m.1$, subtract $1^h\ 27^m.1$ from it; greater than $13^h\ 27^m.1$, subtract it from $25^h\ 27^m.1$;

and the remainder is the hour-angle of Polaris.

With this hour-angle take out the correction from Table IV (below), and add it to or subtract it from the true altitude, according to its sign. The result is the approximate latitude of the place.

Example.—1911, October 27, at $10^h\ 40^m\ 30^s$, P. M., mean solar time, in longitude 29° east of Greenwich, suppose the true altitude of Polaris to be 43° 20′: required the latitude of the place.

	h	m	s
Local astronomical mean time	10	40	30
Reduction from Table III, for $10^h\ 40^m\ 30^s$	+	1	45
Greenwich sidereal time of mean noon, October 27, page 165	14	18	55
Reduction from Table III, for longitude (= $1^h\ 56^m$ east, or minus)	—	0	19
Sum (having regard to signs) is equal to local sidereal time	1	0	51

	h	m	s
	1	27	6
Subtract sidereal time	1	0	51
Remainder is equal to hour-angle of Polaris	0	26	15

		°	′
True altitude	+	43	20
Correction from Table IV (below)	—	1	10
Approximate latitude	+	42	10

TABLE IV—1911.

Hour-angle.	0^h	1^h	2^h	3^h	4^h	5^h
m	° ′ ′	° ′ ′	° ′ ′	° ′ ′	° ′ ′	° ′ ′
0	− 1 10.1 0.0	− 1 7.7 0.4	− 1 0.6 0.8	− 0 49.2 1.1	− 0 34.5 1.3	− 0 17.5 1.5
5	1 10.1 0.0	1 7.3 0.5	0 59.8 0.9	0 48.1 1.1	0 33.2 1.4	0 16.0 1.5
10	1 10.1 0.1	1 6.8 0.5	0 58.9 0.8	0 47.0 1.2	0 31.8 1.3	0 14.5 1.5
15	1 10.0 0.1	1 6.3 0.5	0 58.1 0.9	0 45.8 1.1	0 30.5 1.4	0 13.0 1.5
20	− 1 9.9 0.2	− 1 5.8 0.5	− 0 57.2 0.9	− 0 44.7 1.2	− 0 29.1 1.4	− 0 11.5 1.5
25	1 9.7 0.2	1 5.3 0.6	0 56.3 0.9	0 43.5 1.3	0 27.7 1.5	0 10.0 1.6
30	1 9.5 0.2	1 4.7 0.6	0 55.4 1.0	0 42.2 1.2	0 26.2 1.4	0 8.4 1.5
35	1 9.3 0.3	1 4.1 0.7	0 54.4 1.0	0 41.0 1.3	0 24.8 1.4	0 6.9 1.5
40	− 1 9.0 0.3	− 1 3.4 0.7	− 0 53.4 1.0	− 0 39.7 1.2	− 0 23.4 1.5	− 0 5.4 1.5
45	1 8.7 0.3	1 2.7 0.7	0 52.4 1.0	0 38.5 1.3	0 21.9 1.5	0 3.9 1.6
50	1 8.4 0.3	1 2.0 0.7	0 51.4 1.1	0 37.2 1.3	0 20.4 1.4	0 2.3 1.5
55	1 8.1 0.4	1 1.3 0.7	0 50.3 1.1	0 35.9 1.4	0 19.0 1.5	− 0 0.8 1.5
60	− 1 7.7	− 1 0.6	− 0 49.2	− 0 34.5	− 0 17.5	+ 0 0.7

Hour-angle.	6^h	7^h	8^h	9^h	10^h	11^h
m	° ′ ′	° ′ ′	° ′ ′	° ′ ′	° ′ ′	° ′ ′
0	+ 0 0.7 1.5	+ 0 18.8 1.5	+ 0 35.6 1.3	+ 0 49.9 1.1	+ 1 0.9 0.7	+ 1 7.8 0.4
5	0 2.2 1.6	0 20.3 1.4	0 36.9 1.3	0 51.0 1.0	1 1.6 0.7	1 8.2 0.3
10	0 3.8 1.5	0 21.7 1.5	0 38.2 1.3	0 52.0 1.0	1 2.3 0.7	1 8.5 0.3
15	0 5.3 1.5	0 23.2 1.4	0 39.5 1.2	0 53.0 1.0	1 3.0 0.7	1 8.8 0.3
20	+ 0 6.8 1.5	+ 0 24.6 1.4	+ 0 40.7 1.2	+ 0 54.0 1.0	+ 1 3.7 0.6	+ 1 9.1 0.2
25	0 8.3 1.6	0 26.0 1.4	0 41.9 1.2	0 55.0 0.9	1 4.3 0.6	1 9.3 0.2
30	0 9.9 1.5	0 27.4 1.4	0 43.1 1.2	0 55.9 0.9	1 4.9 0.6	1 9.5 0.2
35	0 11.4 1.5	0 28.8 1.4	0 44.3 1.2	0 56.8 0.9	1 5.5 0.5	1 9.7 0.2
40	+ 0 12.9 1.5	+ 0 30.2 1.4	+ 0 45.5 1.1	+ 0 57.7 0.8	+ 1 6.0 0.5	+ 1 9.9 0.1
45	0 14.4 1.5	0 31.6 1.3	0 46.6 1.2	0 58.5 0.8	1 6.5 0.4	1 10.0 0.1
50	0 15.9 1.4	0 32.9 1.4	0 47.8 1.1	0 59.3 0.8	1 6.9 0.5	1 10.1 0.0
55	0 17.3 1.5	0 34.3 1.3	0 48.9 1.0	1 0.1 0.8	1 7.4 0.4	1 10.1 0.0
60	+ 0 18.8	+ 0 35.6	+ 0 49.9	+ 1 0.9	+ 1 7.8	+ 1 10.1